

# Wikipedia Primary School

Providing the information necessary to the cycle of Primary Education in the languages used by the different education systems

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Giovanni Profeta's research thesis focuses on the representation of stream data coming from the Internet. The thesis aims to provide a theoretical model and visual tools for the analysis of the increasing amount of data daily generated through the web (by collaborative platforms, social networks, connected appliances etc.). Furthermore, the thesis tries to investigate the physical representation of data as a means to increase accessibility and user engagement.

For the Wikipedia Primary School project Giovanni Profeta is leading the evaluation process of the articles under examination through digital quantitative methods.

- Giovanni's main contributions are the following:
- Analysis of the state of the art of articles relevant to primary education for South African primary school curriculum.
  - Verification of the project impact to Wikipedia content
  - Evaluation of significant variables of interest for further research projects.

The visual evaluation is conceived as an iterative process. All the data visualizations are designed and optimized thanks to the feedback of team members involved in the qualitative evaluation. Giovanni has developed a web scraper to gather data about Wikipedia articles and a set of data visualizations, as objective as possible, in order to provide visual tools for understanding the actions that should be undertaken by the research team. Giovanni has also released in open source the datasets and the code for web scraping and data visualization (as a GitHub project called Wikimole).

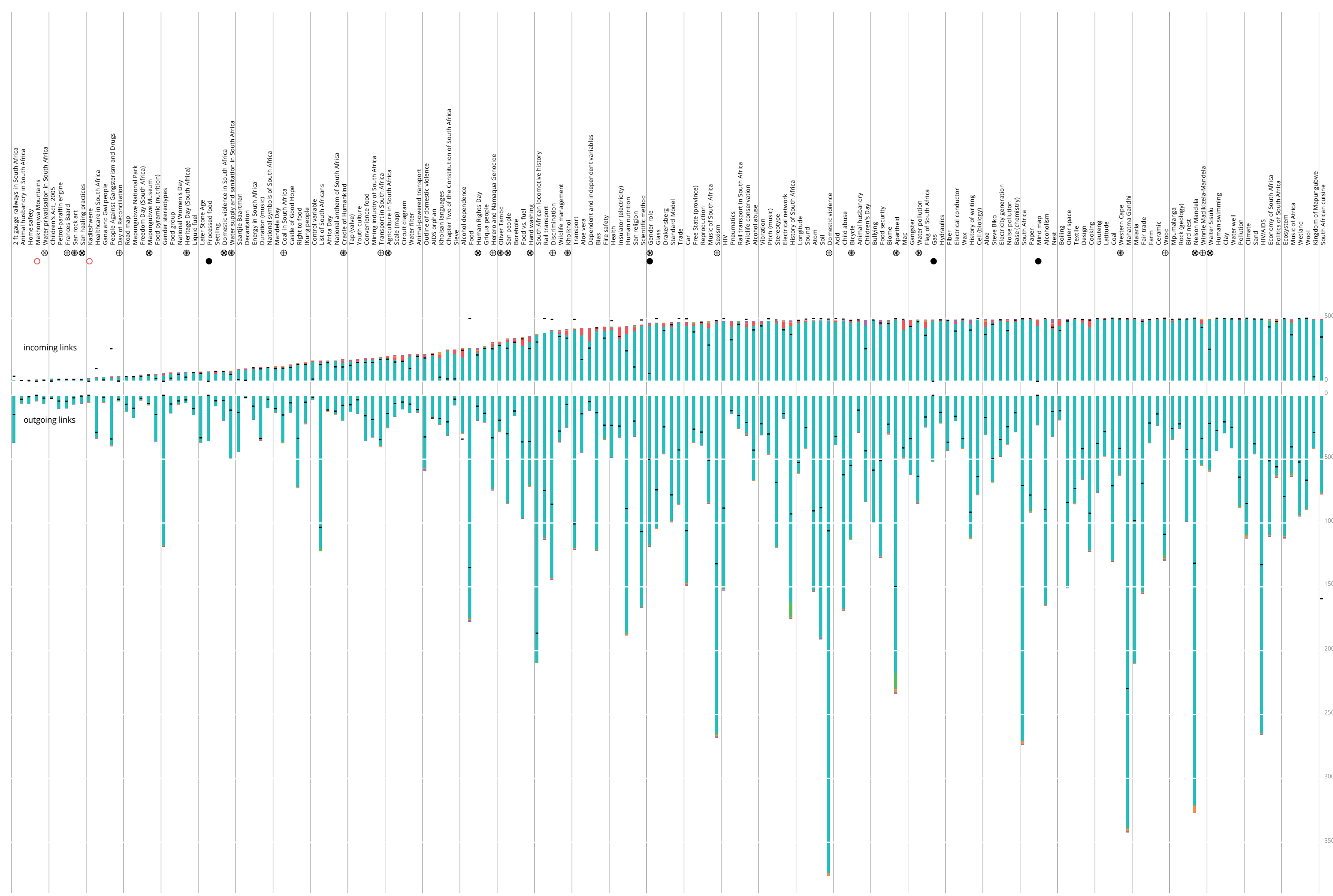
## Network of the articles under examination\*

The visualization shows relationships among the selected 176 articles and their incoming links (in Wikipedia: "What links here"). Clusters of circles refers to the areas of interest from which incoming links come. The size of the bubbles shows the amount of incoming links. Bubbles with the same colors are clusters of articles with incoming links in common. The closest the bubbles, the more correlated the articles. The circles show the areas of interest from which incoming links come.

August 2015	March 2016	
articles under examination	174	176 (2 new articles)
incoming links per article (average)	309	342 (+10.6%)
outgoing links per article (average)	386	667 (+173%)
Google page rank (average)	5,19	5,18 (-0,003%)
total amount of editors	845	773 (-8,5%)
number of edits	1463	1481 (+1,2%)
issues per article (average)	0,59	0,52 (-12%)

## Incoming and outgoing links

The visualization shows the balance between incoming links (in Wikipedia: "What links here") and links to other Wikipedia pages (Wikilinks). On the top bars show the amount of incoming links. On the bottom bars show the amount of outgoing links. From left to right, articles are in ascending order of incoming links.



**The project**  
The research project aims in developing and evaluating a system to assess Wikipedia articles for primary education and seeks to involve a wide network of scholars and contributors in their production. The research project is developed within a Swiss-South African cooperation (2014-2017) and it aims at increasing the quality and quantity of a selection of focuses on Wikipedia content relevant to primary education as prescribed by the South African primary school curriculum.

**Research problem**  
Wikipedia is meant to be an educational tool and it is currently available online, via mobile phones and offline. Experiences have shown that Wikipedia does not generally provide information that responds directly to curriculum-based questions. The project relies on Wikipedia as an existing and growing resource, it solves the need for an encyclopedia capable of responding to curriculum-based questions, and it fosters Wikipedia content, quality and outreach.

**Research team**  
The research is developed within a Swiss-South African cooperation lead by the University of Applied Sciences and Arts of Southern Switzerland (SUPSI) and the University of Cape Town, in partnership with Wikimedia Switzerland and the Africa Centre based in Cape Town, and with the support of SNF and the South African National Research Foundation (NRF).

**Switzerland**  
Iolanda Pensa (principal investigator)  
Luca Botturi  
Florence Devouard  
Giancarlo Gianocca  
Erica Litrenta  
Giovanni Profeta  
Marta Pucciarelli

**South Africa**  
Tobias Schönwetter (principal investigator)  
Isla Haddow-Flood  
Kelsey Wiens

**Methodology**  
• Establishment of a scientific committee.  
• Establishment and implementation of a Wikipedia Scientific Journal.  
• Partnerships with scientific journals and scholars.  
• Partnerships with institutions working in education.  
• Evaluation.

**Milestones**  
Since its commencement, the project has progressed through the following key milestones:  
1. Analysis of the South African primary school curriculum and identification of relevant themes and content.  
2. Identification, selection and involvement of a scientific committee comprised of international subject-matter experts (education, open content, OER, Wikipedia and Wikimedia, expertise on African topics) to assist with content-related questions.

3. Identification of Wikipedia articles in English that are relevant to the South African primary school curriculum with feedback from the scientific committee.
4. Development of guidelines for the review process.
5. Development of a survey to involve teachers in the process.
6. Drafting of Issue 0 ("pilot issue") of the Wikipedia Scientific Journal.
7. Identification of academic experts and pertinent scientific journals to contribute to the review process of the Wikipedia articles selected.
8. Launch of the review process. Selection of articles and invitation of potential reviewers to review articles. 25 experts are currently involved in the review of 37 articles.
9. Pilot launch of the journal review process. Selection of articles, identification of potential journals, and invitation to review articles.
10. Development and testing of approaches to trigger article creation and improvement directly on Wikipedia.
11. Selection of criteria and data collection for the evaluation (information design).

12. Organization of three events (edit-a-thons) in South Africa to improve articles related to primary school curriculum. 17 articles have been edited and expanded.
13. Meetings in South Africa (Cape Town and Johannesburg) to discuss project methodology and expected outcomes with around 15 stakeholders working in the education sector as well as 30 Wikimedia community members.

For more information  
<http://bit.ly/WikipediaPS>

## Project Leaders

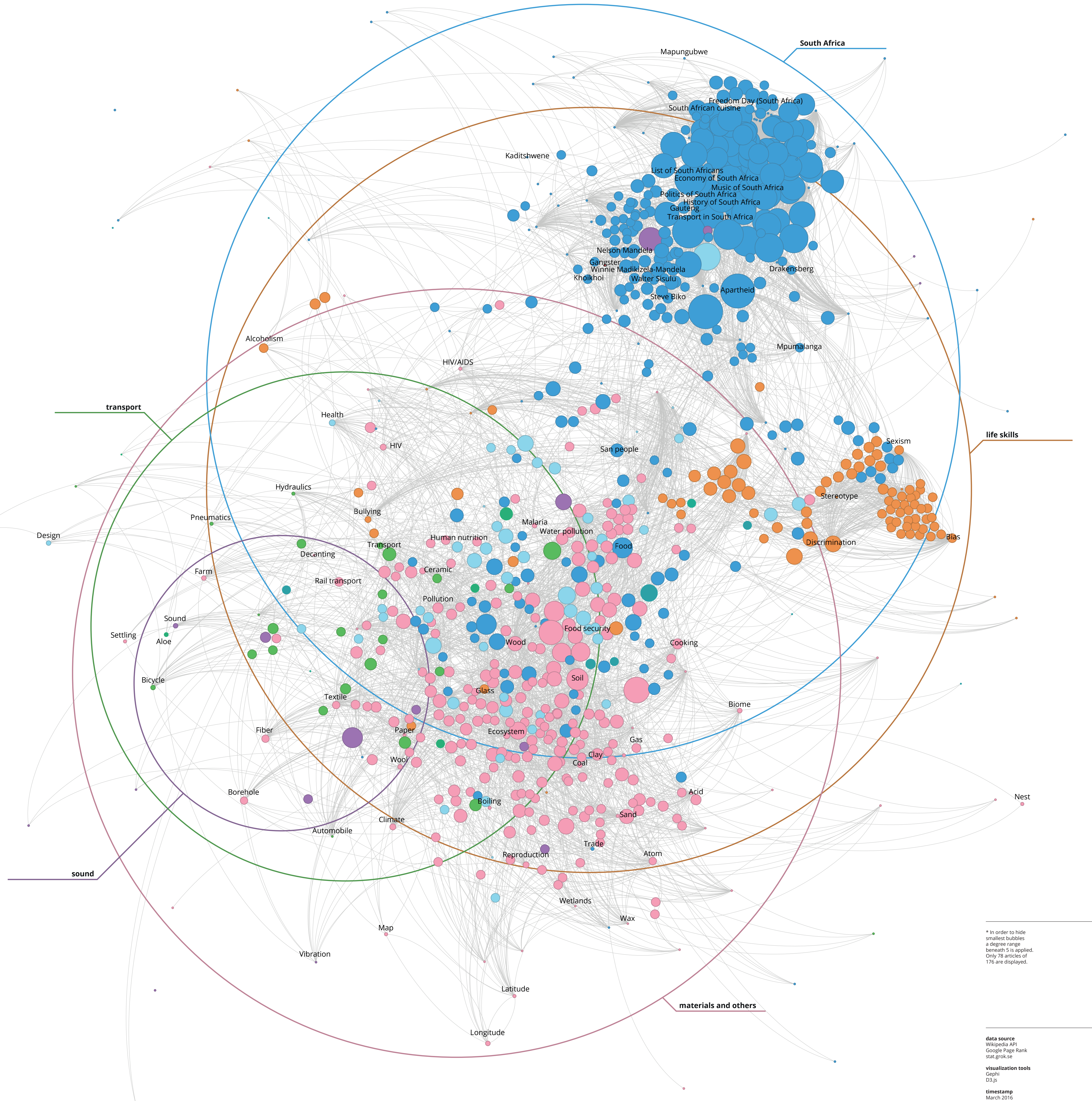
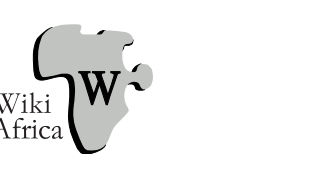
University of Applied Sciences and Arts of Southern Switzerland  
**SUPSI**



## Partners



AFRICA CENTRE



\* In order to hide smallest bubbles a degree range beneath 5 is applied. Only 76 articles of 176 are displayed.

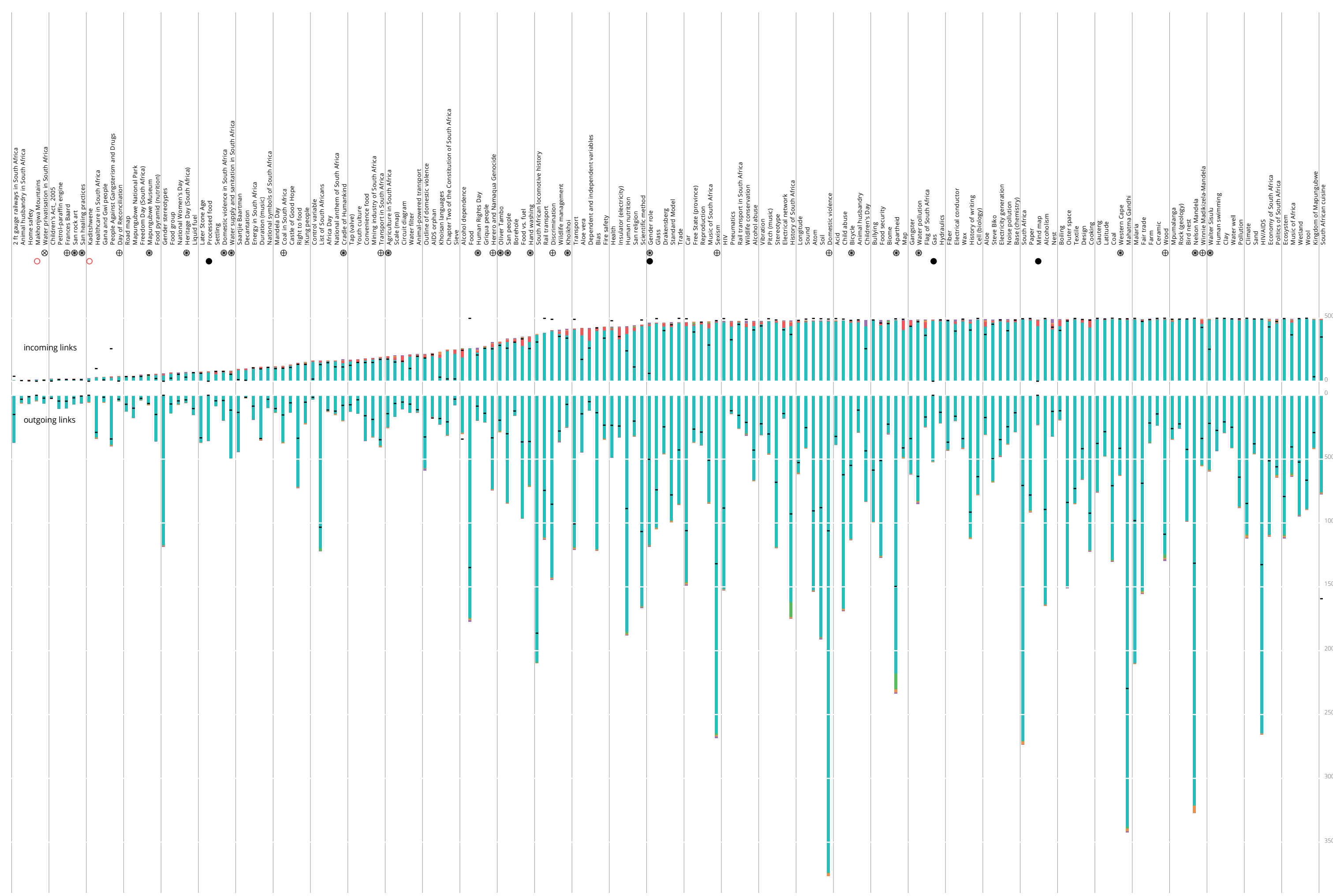
data source  
Wikipedia API  
Google Page Rank  
stat.grok.se

visualization tools  
D3.js

timestamp  
March 2016

## Articles' features

The visualization shows the amount of issues, references, notes, images and see also for every article. On the top bars show the number of issues. On the bottom bars show the amount of references, notes, images and see also. From left to right, articles are in ascending order of features.



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