Exploring the descriptive power of altmetrics: case study of Africa, USA and EU28 countries (2012-2014)

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Introduction

- **Descriptive altmetrics:** analysis and description of the activities (and reception) of scholarly objects in altmetric sources, and the dynamics and interactions among different actors and objects (answer to questions of *who*, *when*, *how* and *what*)

- **Comparative altmetrics:** focus on the comparability of publications and actors in performative terms (answer to questions of high(er)/low(er) or better/worse)

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Descriptive altmetrics

Exploring descriptive approaches based on altmetrics indicators:

- *Basic Indicators:* similar to bibliometric analysis, possibilities of calculating basic indicators of coverage of research outputs in social media

- *Communities of attention* (Haustein et al, 2015): analysis of the communities (e.g. Tweeters, bloggers, etc.) that are disseminating/discussing scientific outputs

- *Altmetrics thematic/geographic landscapes*: analysis of the social media reception of publications across scientific topics and nations (tracking thematic/geographic reach)

- *Hashtag analysis*: Tracking hashtags (conversation) around research for facilitating collaboration, discussions, etc.

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Case study

- Analyzing altmetrics reception of publications from ZA, EU28, and USA

- >3 mill. Web of Science publications (DOI/PMID)

- Period 2012-2014

- African, European 28 and USA affiliations

- Altmetric.com data (up to 26 June 2016)

Basic indicators

- Counts

Unit	p	p doi/pmid (tracked)	pp doi/pmid (tracked)	ttw	tfb	tb	tn	tgp	tf1	tpd	twk
Africa	125801	104040	82.7%	190794	21504	6128	11294	2950	698	887	1249
EU28	1605420	1305386	81.3%	2034886	224366	67262	118568	40204	14106	4153	16006
USA	1686054	1281619	76.0%	3461185	356098	136678	263514	71995	23610	4964	22810

Basic indicators

- Averages

Unit	P (tracked)	mtw	mfb	mb	mn	mgp	mf1	mpd	mwk
Africa	104040	1.83	0.21	0.06	0.11	0.03	0.01	0.01	0.02
EU28	1305386	1.56	0.17	0.05	0.09	0.03	0.01	0.00	0.02
USA	1281619	2.70	0.28	0.11	0.21	0.06	0.02	0.00	0.03

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Basic indicators

- Coverage

Unit	P (tracked)	PP (tw1)	PP (fb1)	PP (b1)	PP (n1)	PP (gp1)	PP (f11)	Pp (pd1)	PP (wk1)
Africa	104040	27.02%	7.47%	2.73%	2.12%	0.98%	0.53%	0.64%	1.20%
EU28	1305386	28.50%	6.45%	2.71%	2.32%	1.22%	0.84%	0.25%	1.23%
USA	1281619	37.39%	9.62%	5.09%	4.48%	2.05%	1.42%	0.29%	1.78%

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Communities of Tweeters- Africa
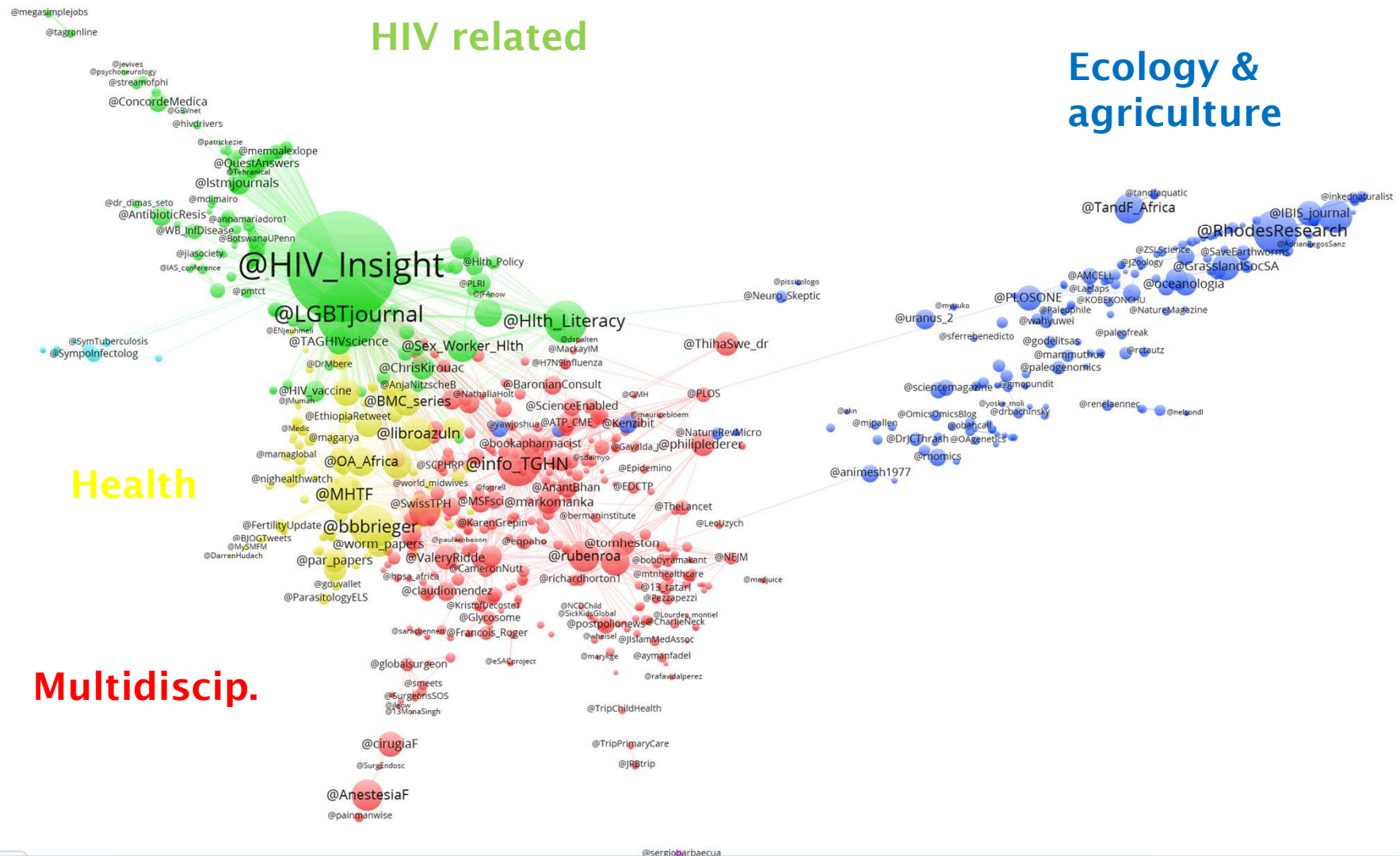
Communities of Tweeters- EU28

Twitter thematic landscapes

Social Sciences & Humanities

Mathematics & Computer Science

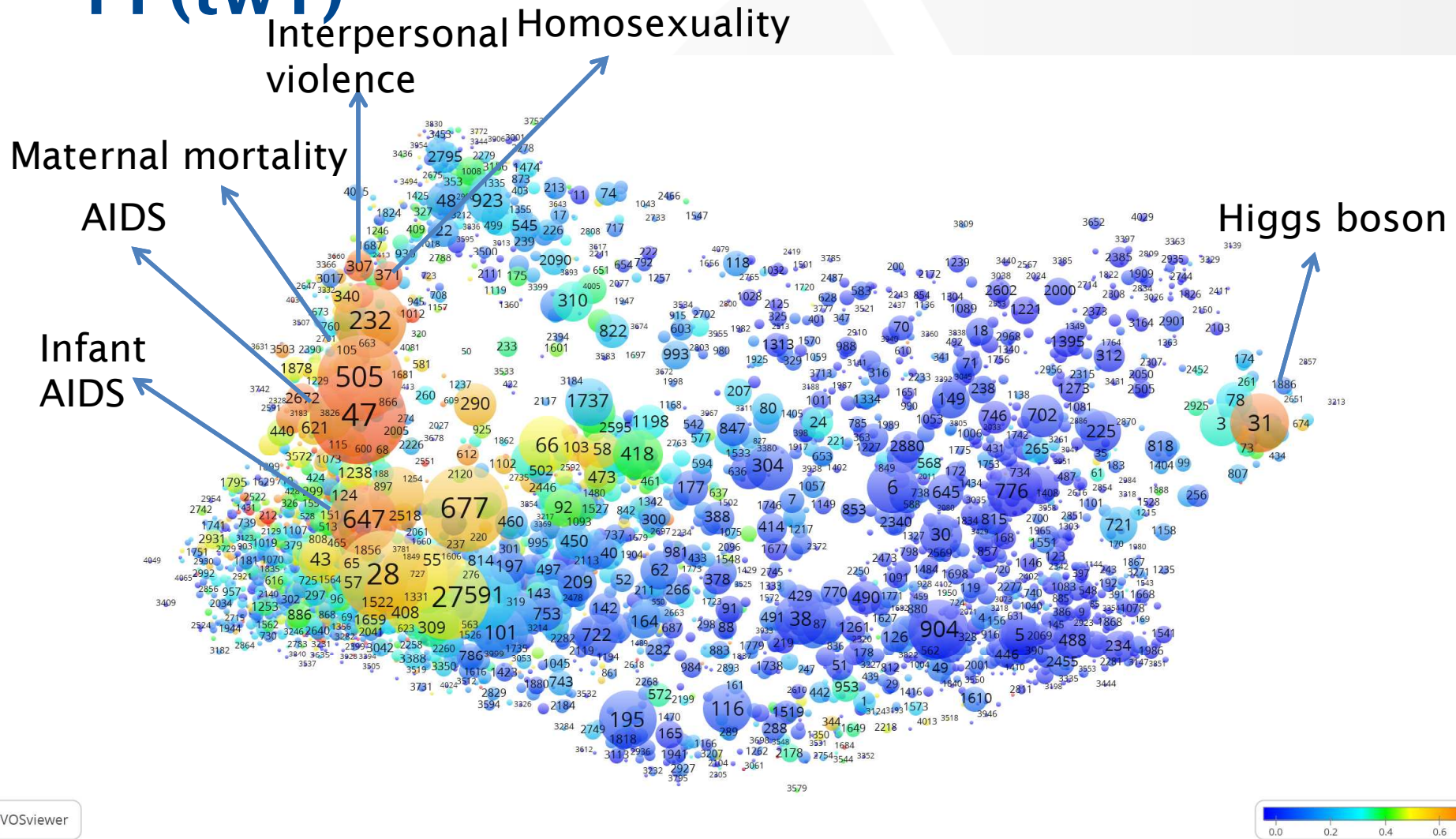Life & Earth Sciences
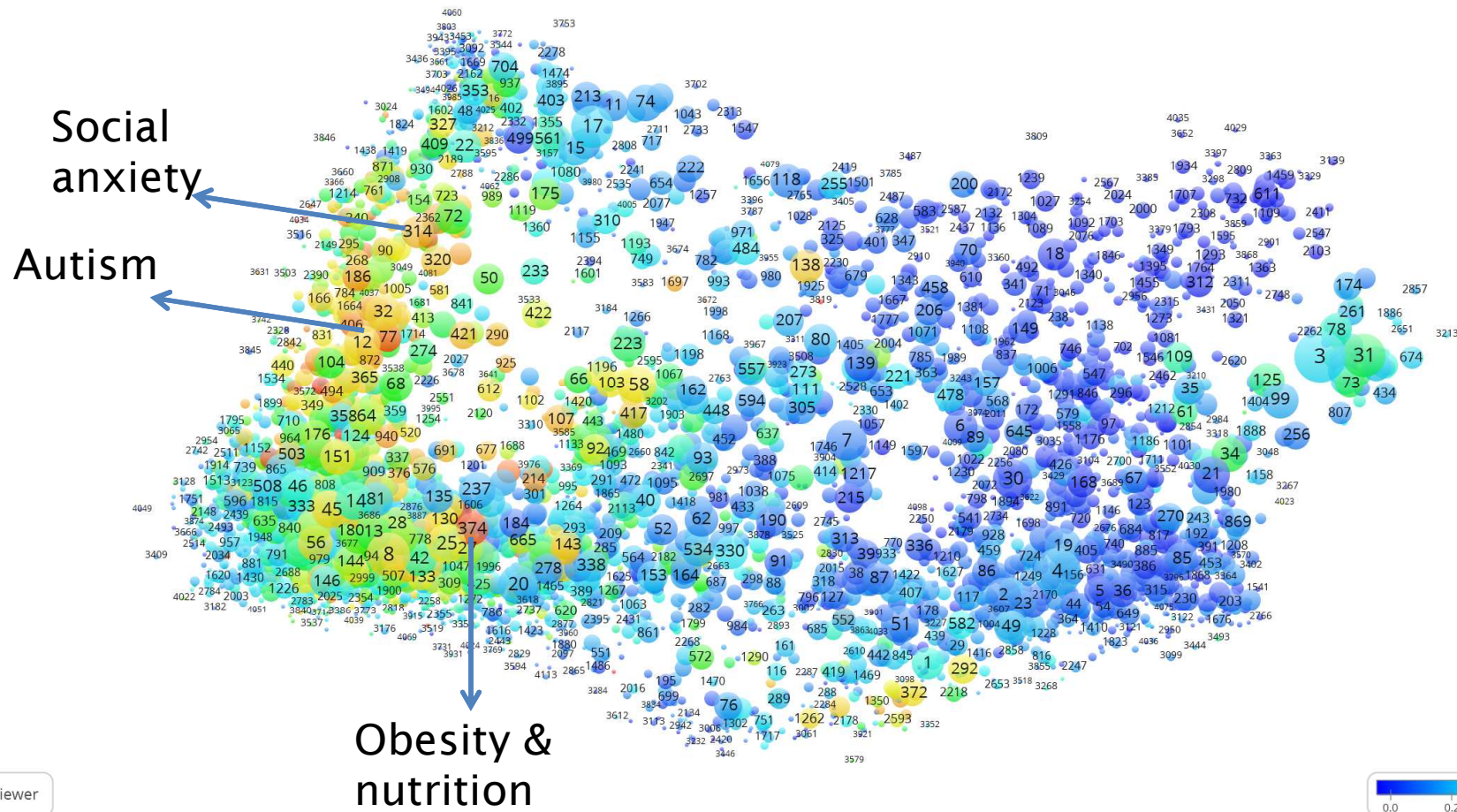
Biomedical & health sciences

Physical Sciences & Engineering
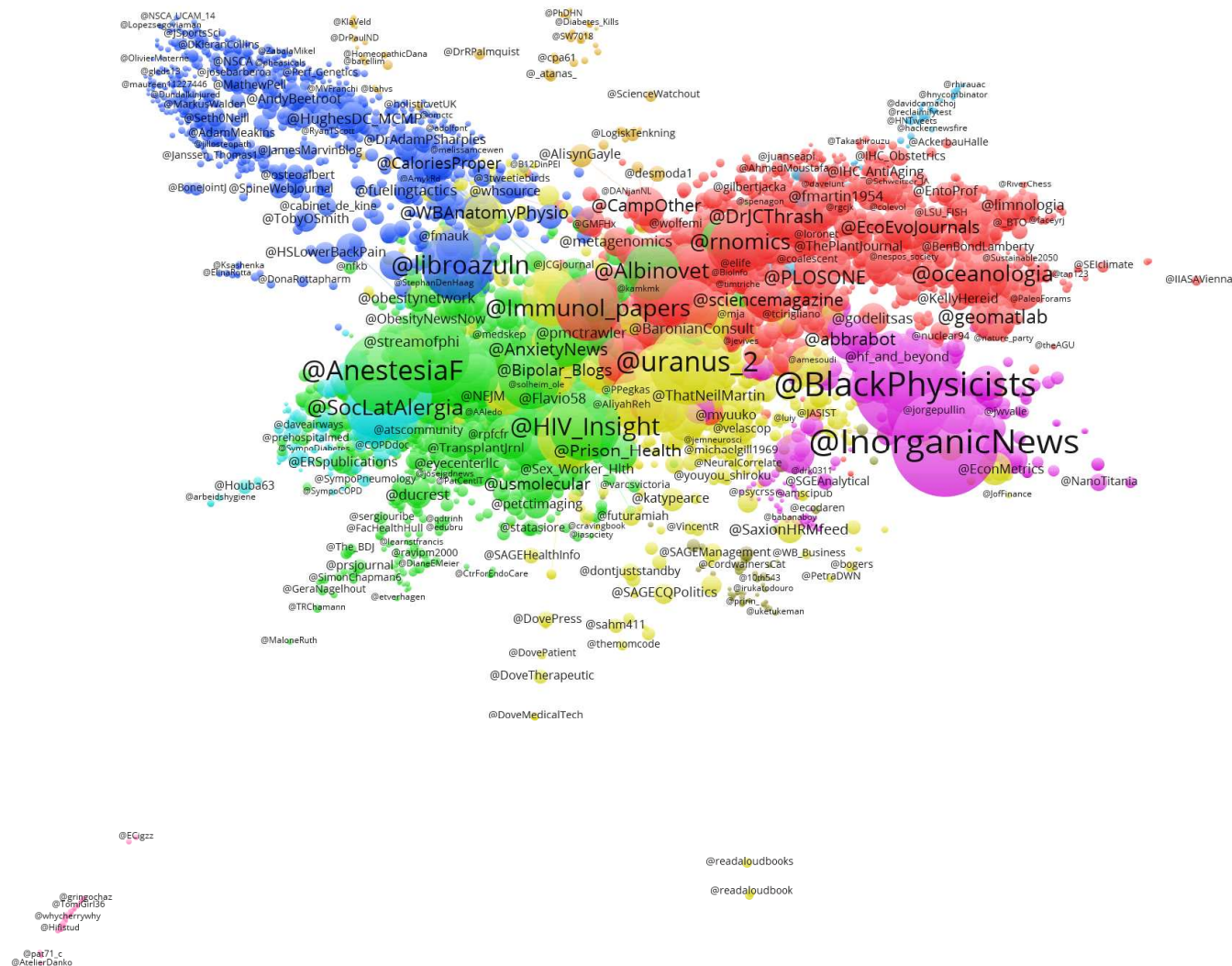
Twitter thematic landscape – Africa PP(tw1)

Twitter thematic landscape – EU28 PP(tw1)

Hashtags analysis – 'conversations'

van Honk & Costas, 2016
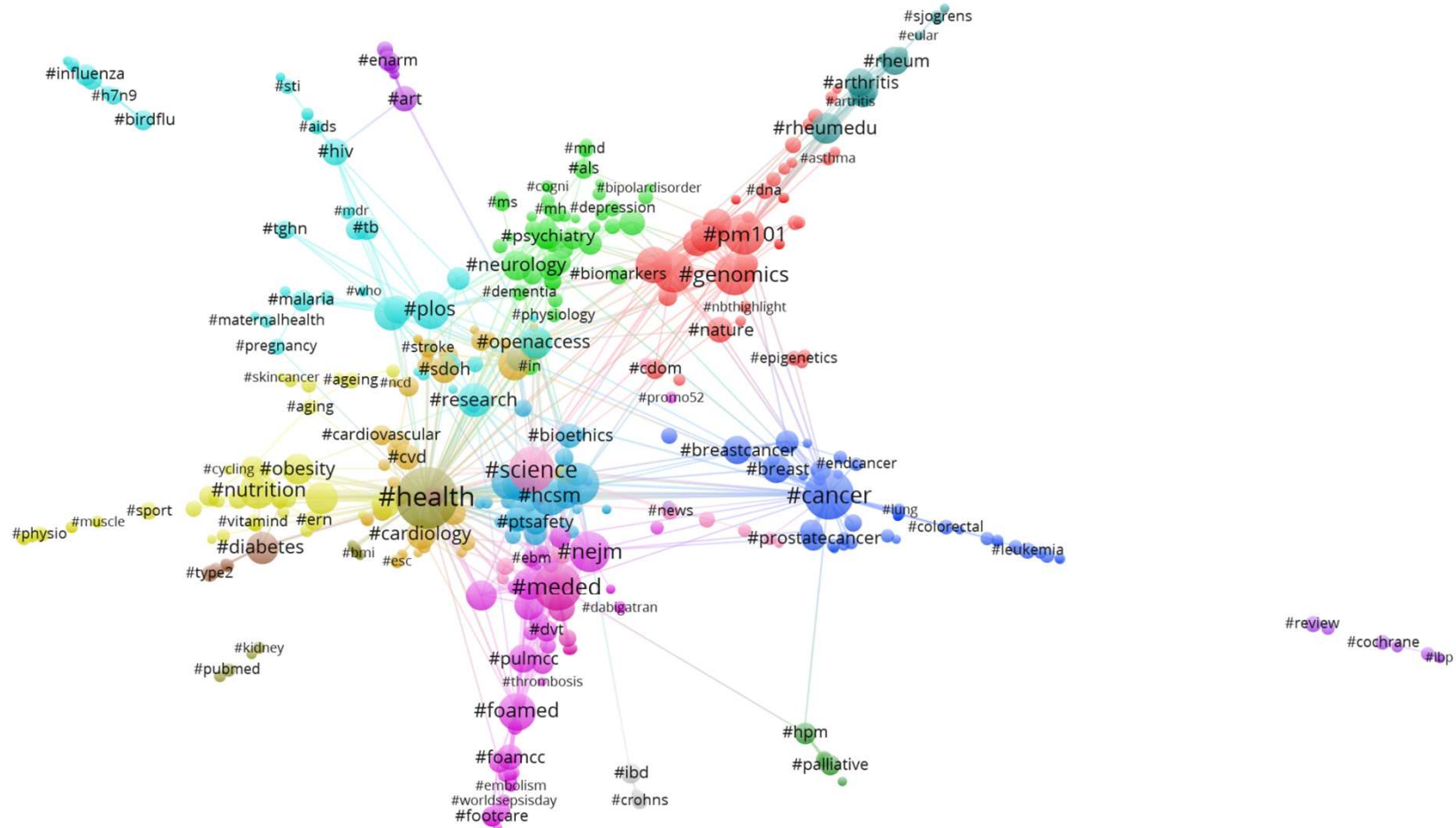
Altmetrics applications

- *Analysis of reception/presence n of scientific publications on social media platforms*

  What are their presence, density, and coverage?

- *Identification of topics/ with a strong social media presence*

  Which fields of Science have a stronger presence in Social media?
  - Altmetric thematic landscapes

- *Identification and characterization of social media users with a scientific interest/orientation*

  Who are the social media users that are interacting with scientific outputs?
  - Communities of attention (Haustein et al, 2015) communities (e.g. Tweeters, bloggers, etc.) that are interacting with scientific outputs
  - Geographical landscapes

- *Identification of "conversations" around scientific publications: possibilities of targeting specific issues or controversies*

  What/how are the "conversations" where scientific publications are getting discussed?

Final considerations

- Exploratory & more 'contextual' perspective on altmetrics
  - It is not about 'better'/'worse', but 'who', 'how' and 'what'

- Moving the potential of altmetric data beyond simple counts or compound indexes, towards more exploratory and comprehensive approaches

- Public awareness of science, Public engagement with science
  - how social media users choose? to use scientific knowledge and on the development of interfaces to mediate between expert and lay understandings of an issue

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Merci de votre attente!