



Moritz Stefaner, Carl Bergstrom and Martin Rosvall

WELL-FORMED.EIGENFACTOR

Visualizing information flow in science

Overview

Team

Approach & data analysis

Interactive visualizations

Remarks & deleted scenes

Team

Eigenfactor Team

University of Washington, Seattle

Carl Bergstrom, Jevin West, Ben Althouse

Martin Rosvall

University of Umea, Sweden

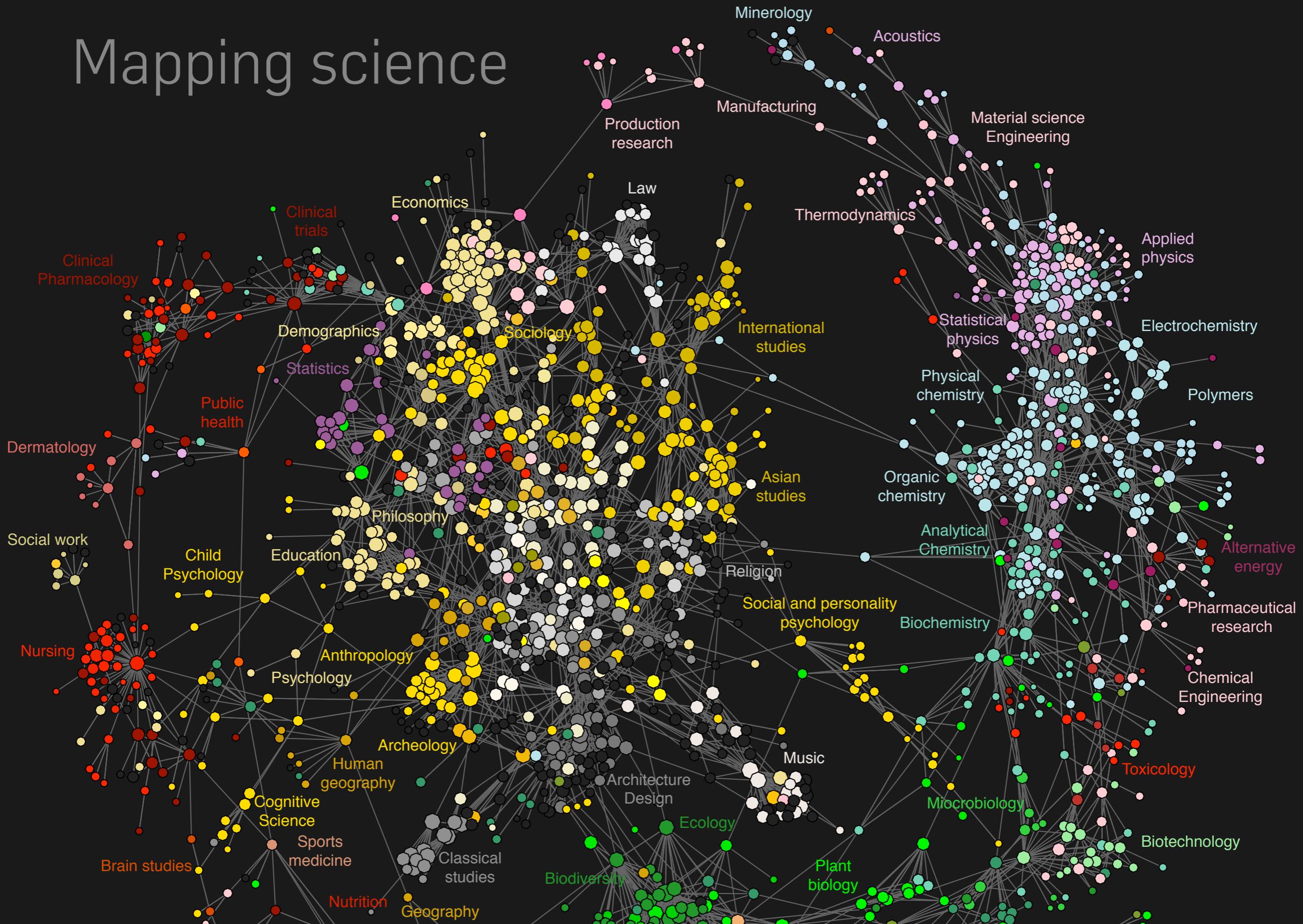
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*University of Applied Sciences
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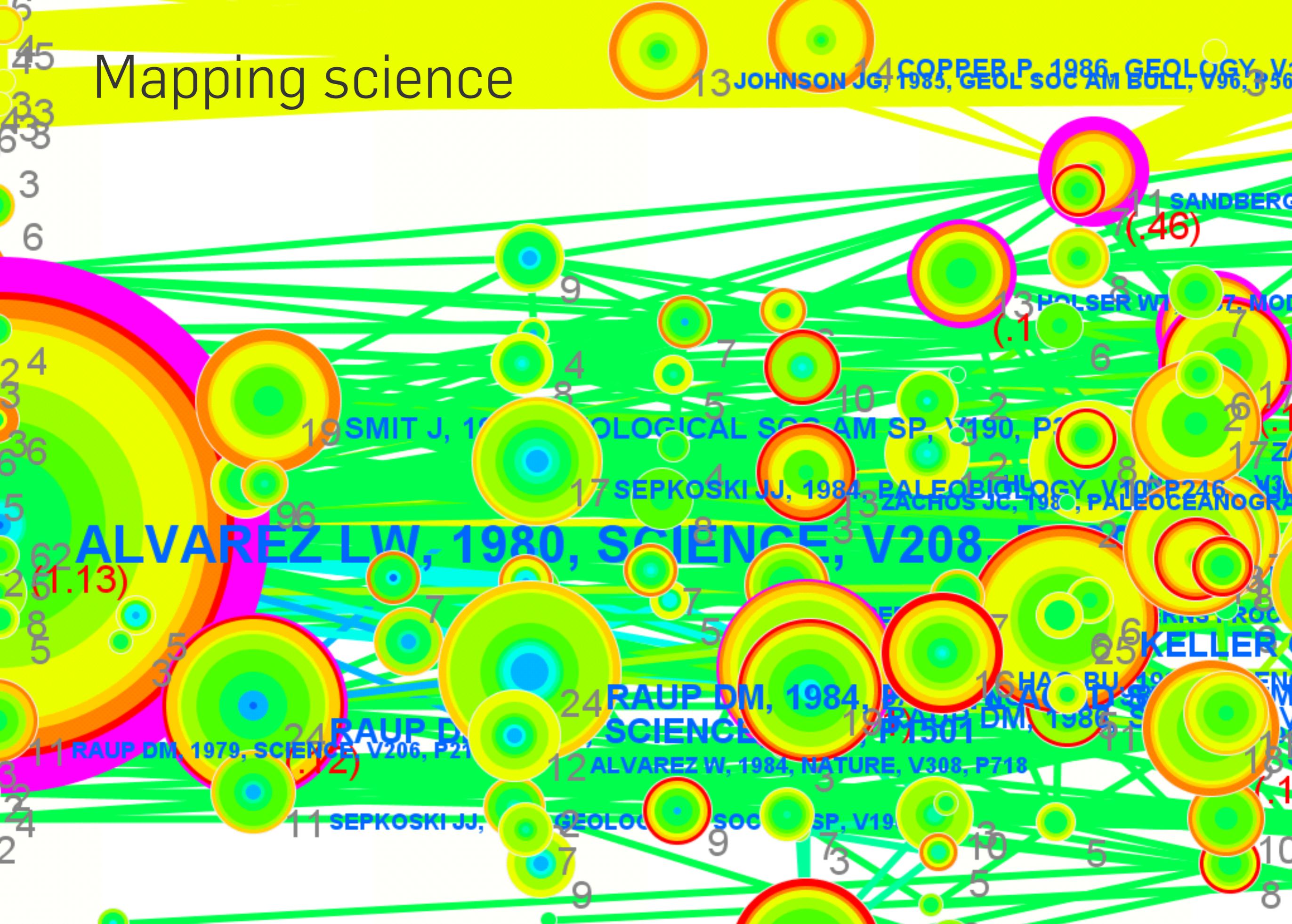


Mapping science

Mapping science



Mapping science



13 JOHNSON JG, 1985, GEOL SOC AM BULL, V96, P 56
14 COPPER P, 1986, GEOLOGY, V14, P 356

11 SANDBERG
(.46)

13 HOLSER W, 1977, MOD
(.1)

19 SMIT J, 1980, GEOLOGICAL SOC AM SP, V190, P 19

17 SEPKOSKI JJ, 1984, PALEOBIOLOGY, V10, P 216
ZACHOS JC, 1980, PALEOCEANOGRAPHY, V1, P 17

ALVAREZ LW, 1980, SCIENCE, V208, P 1093

16 HAY BU, 1988, GEOLOGY, V16, P 1093
KELLER

24 RAUP DM, 1984, SCIENCE, V206, P 1501
19 RAUP DM, 1986, SCIENCE, V231, P 1501

11 RAUP DM, 1979, SCIENCE, V206, P 21

12 ALVAREZ W, 1984, NATURE, V308, P 718

11 SEPKOSKI JJ, 1984, GEOLOGICAL SOC AM SP, V190, P 19

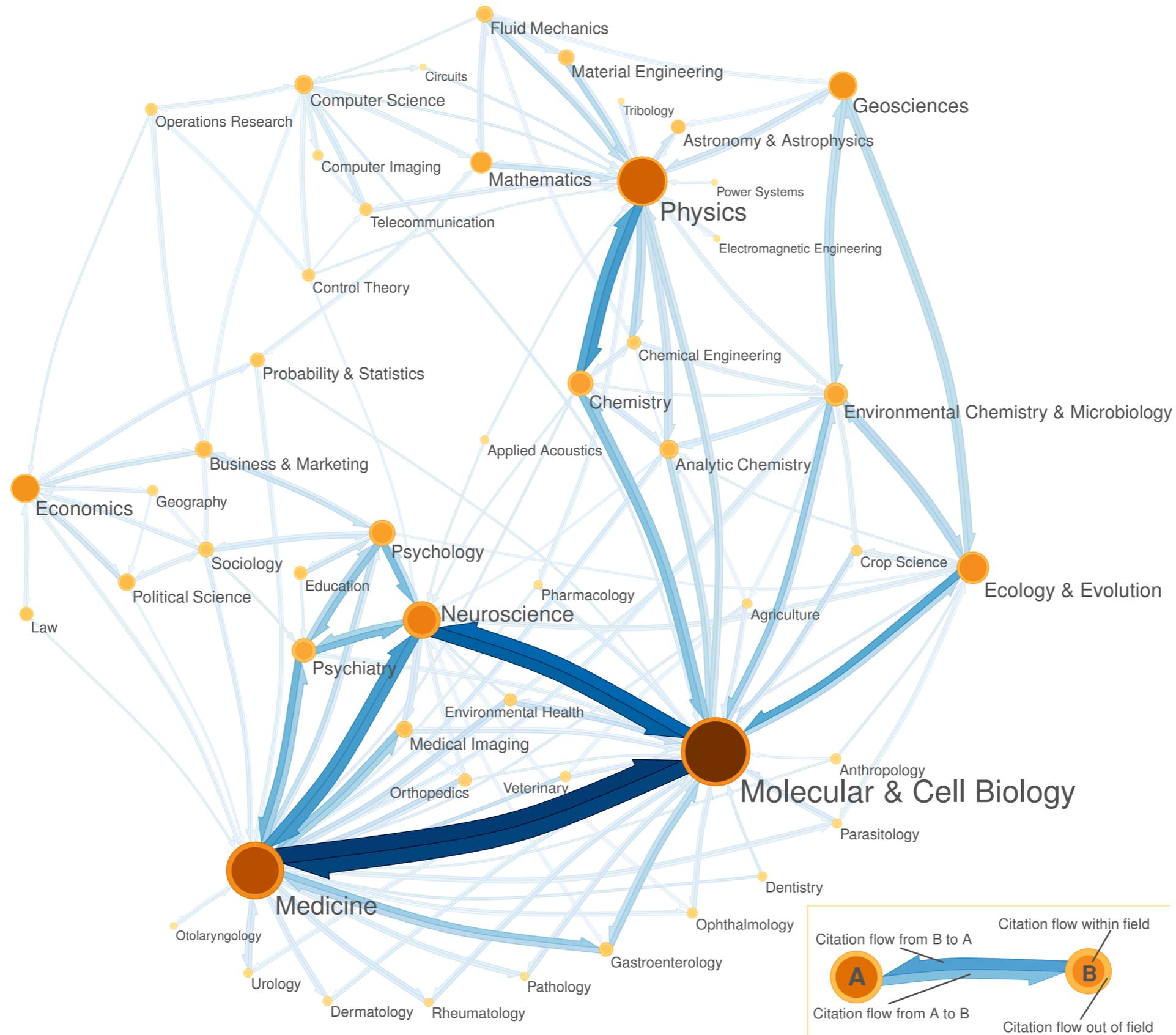
Our approach

Understand and map science as a dynamic network

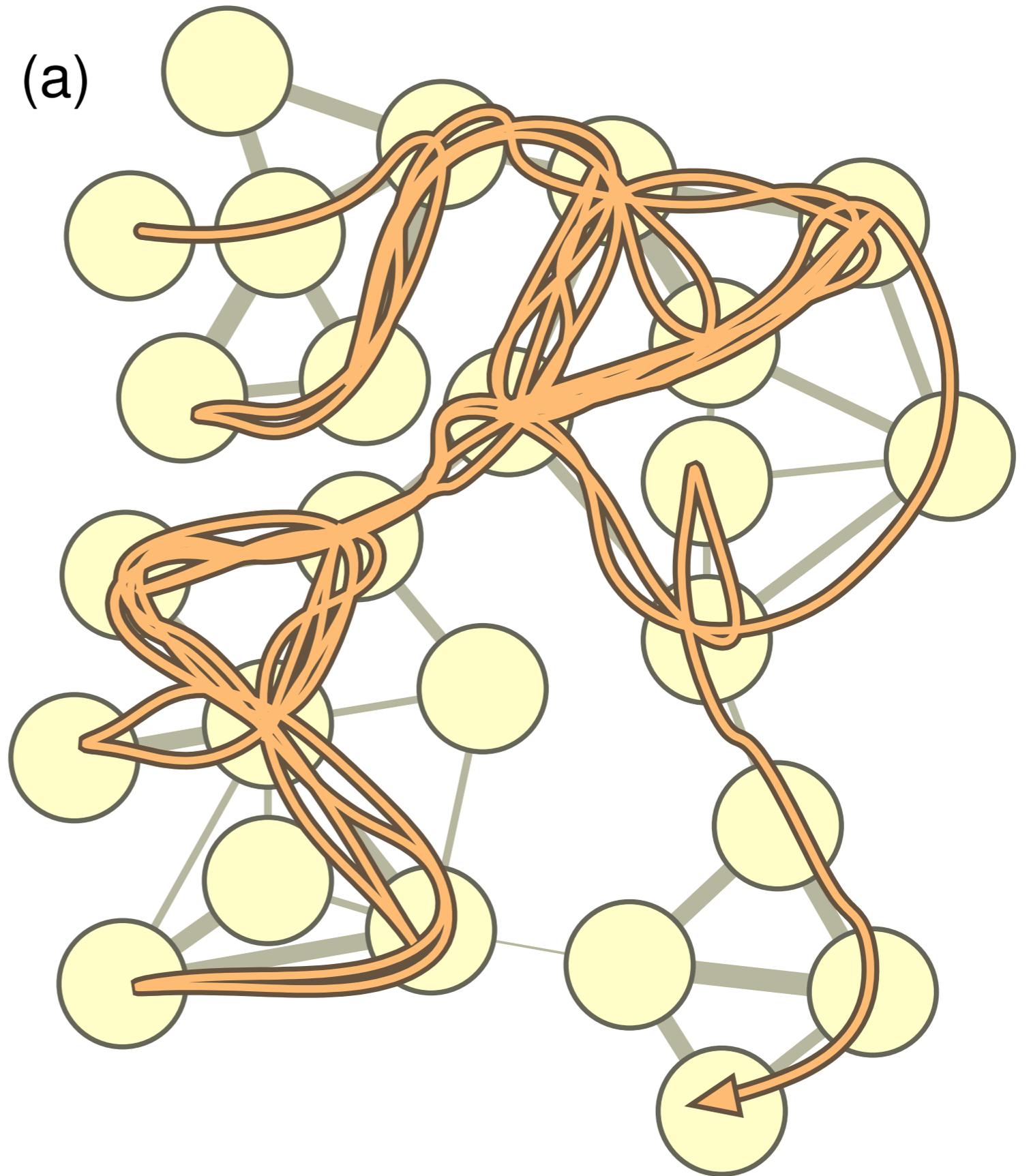
Map information flow

Move beyond traditional ball-and-stick network visualizations

Existing Eigenfactor diagram

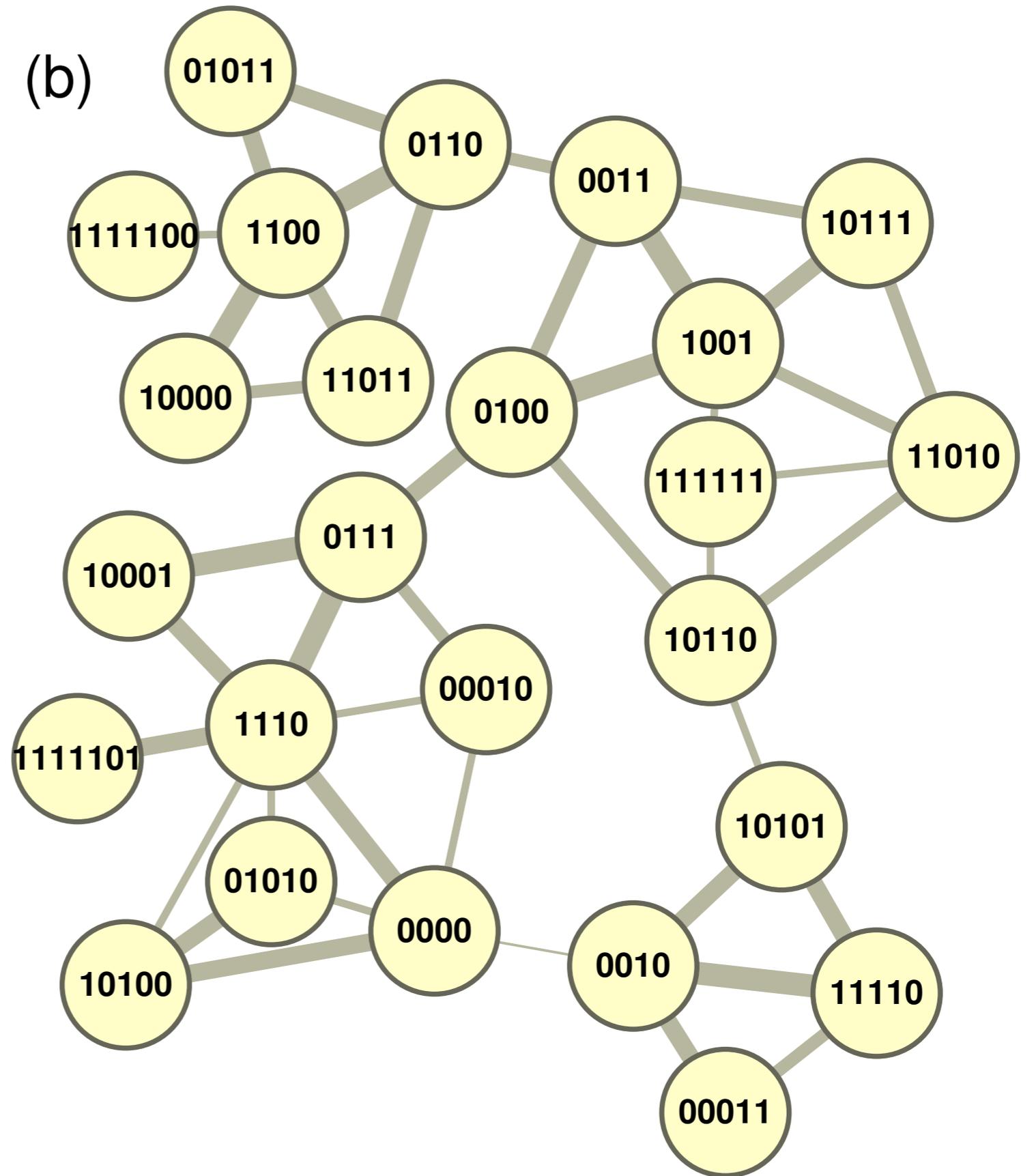


Data analysis



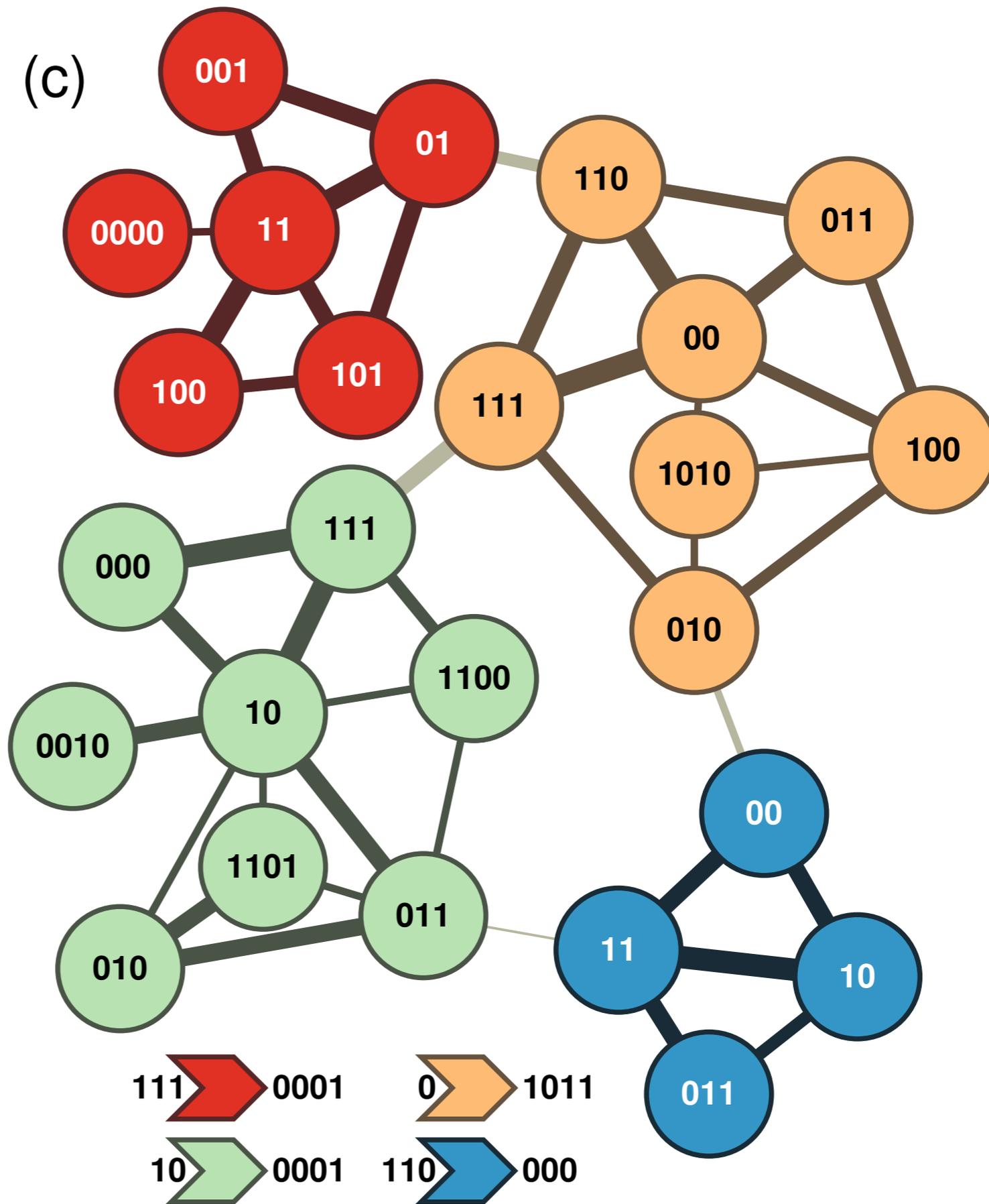
Data: Thomson Reuters' Journal Citation Reports 1997–2005: 7000 journals with 60,000,000 citations

Codebook



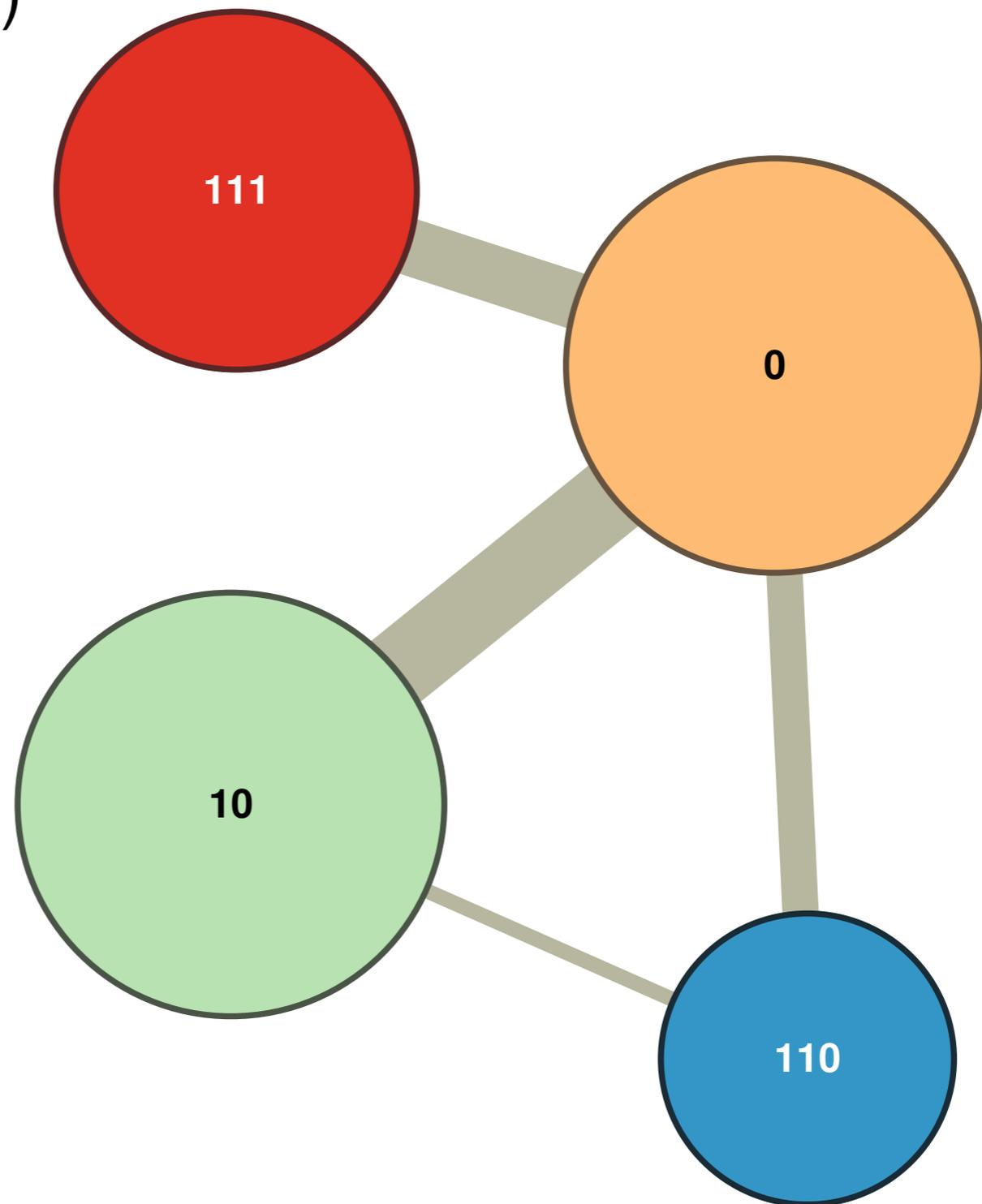
“Area codes”

(c)

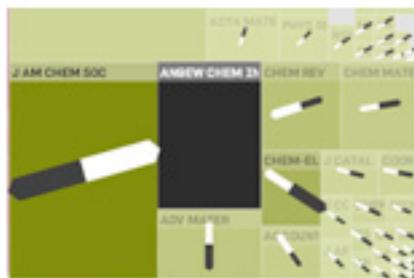


Clusters

(d)



Demos



CLUSTERING



CITATION PATTERNS



THE NEUROSCIENCE STORY

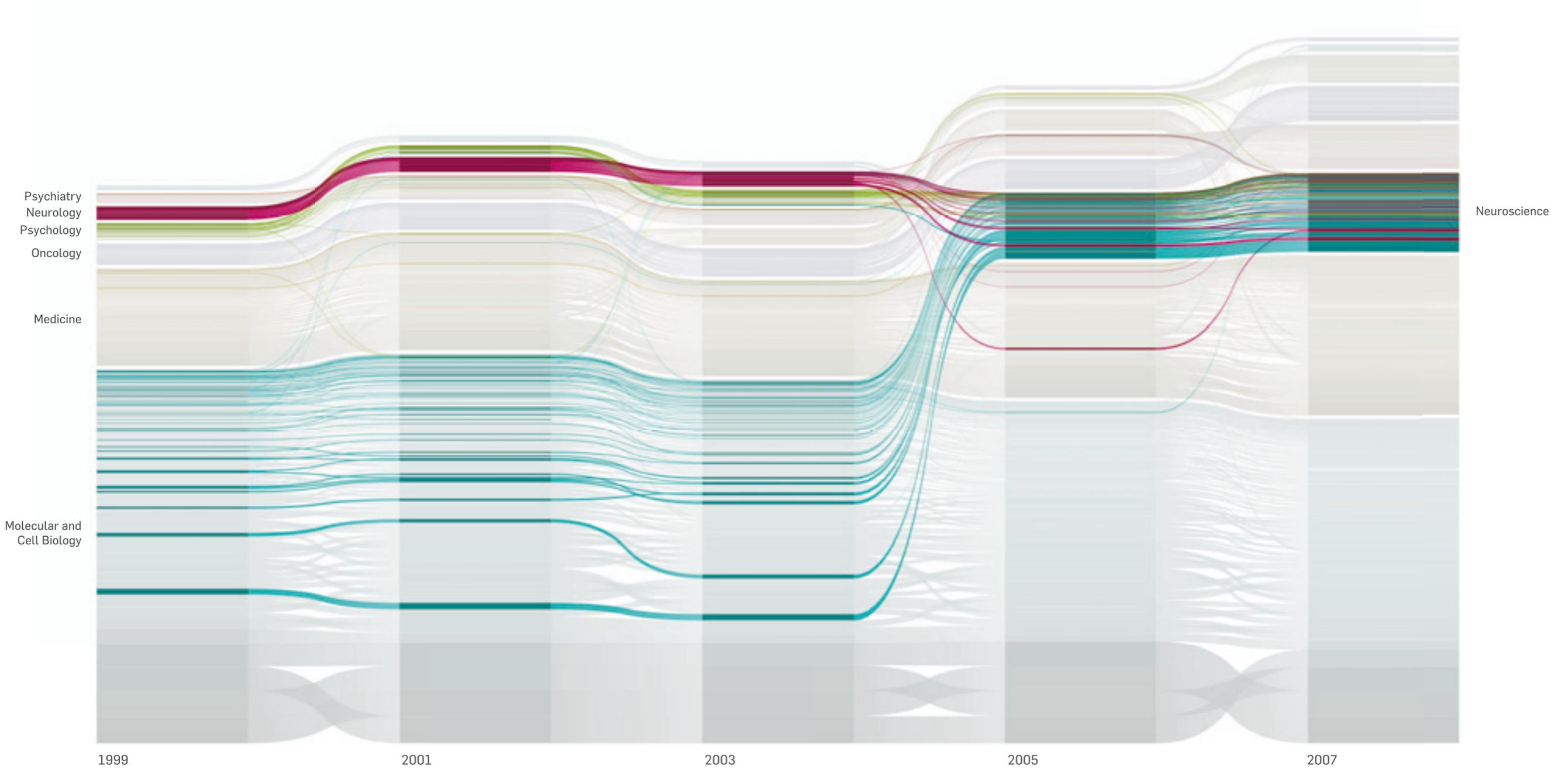


CHANGE OVER TIME

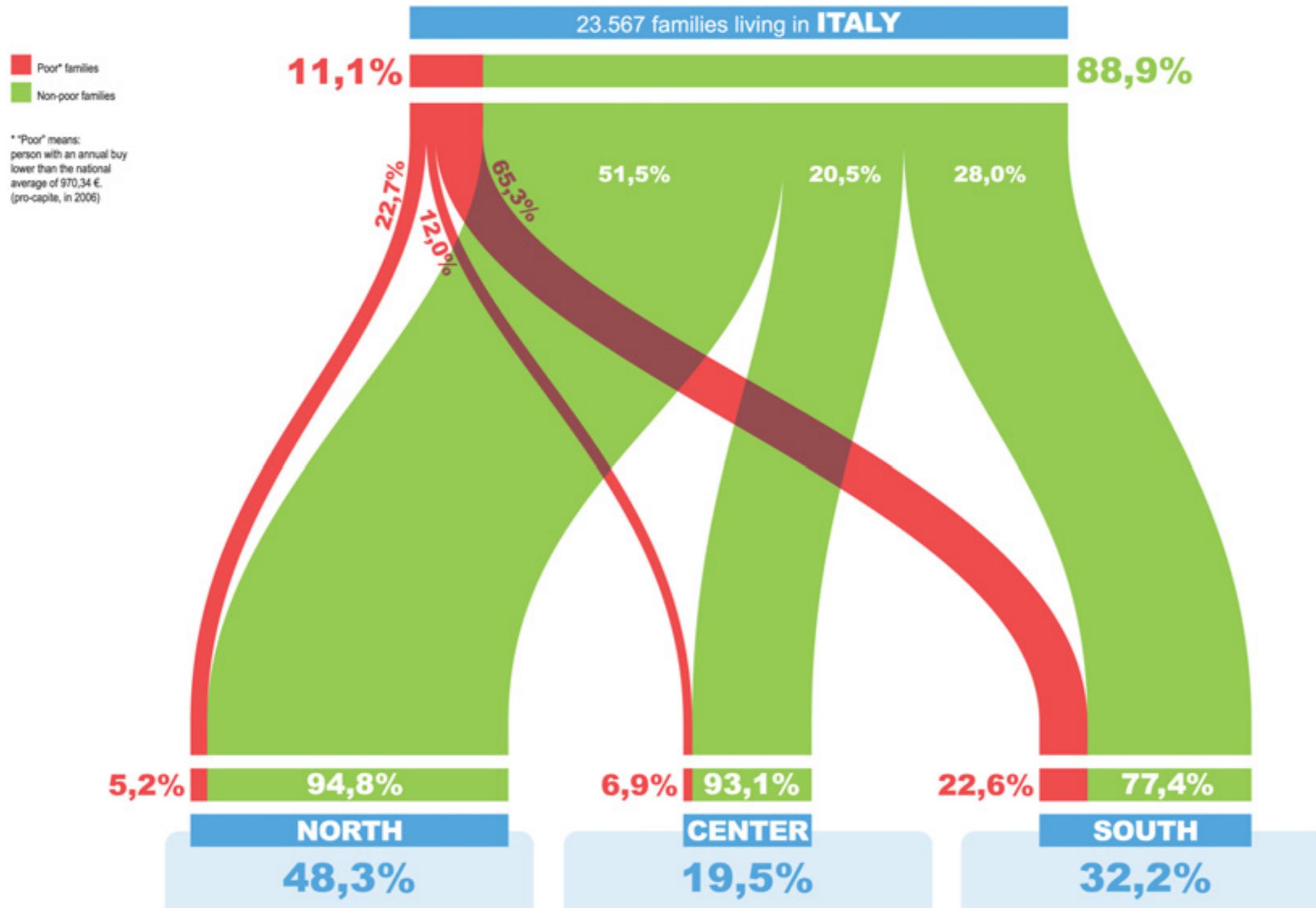


MAP

Neuroscience story



Sankey diagrams



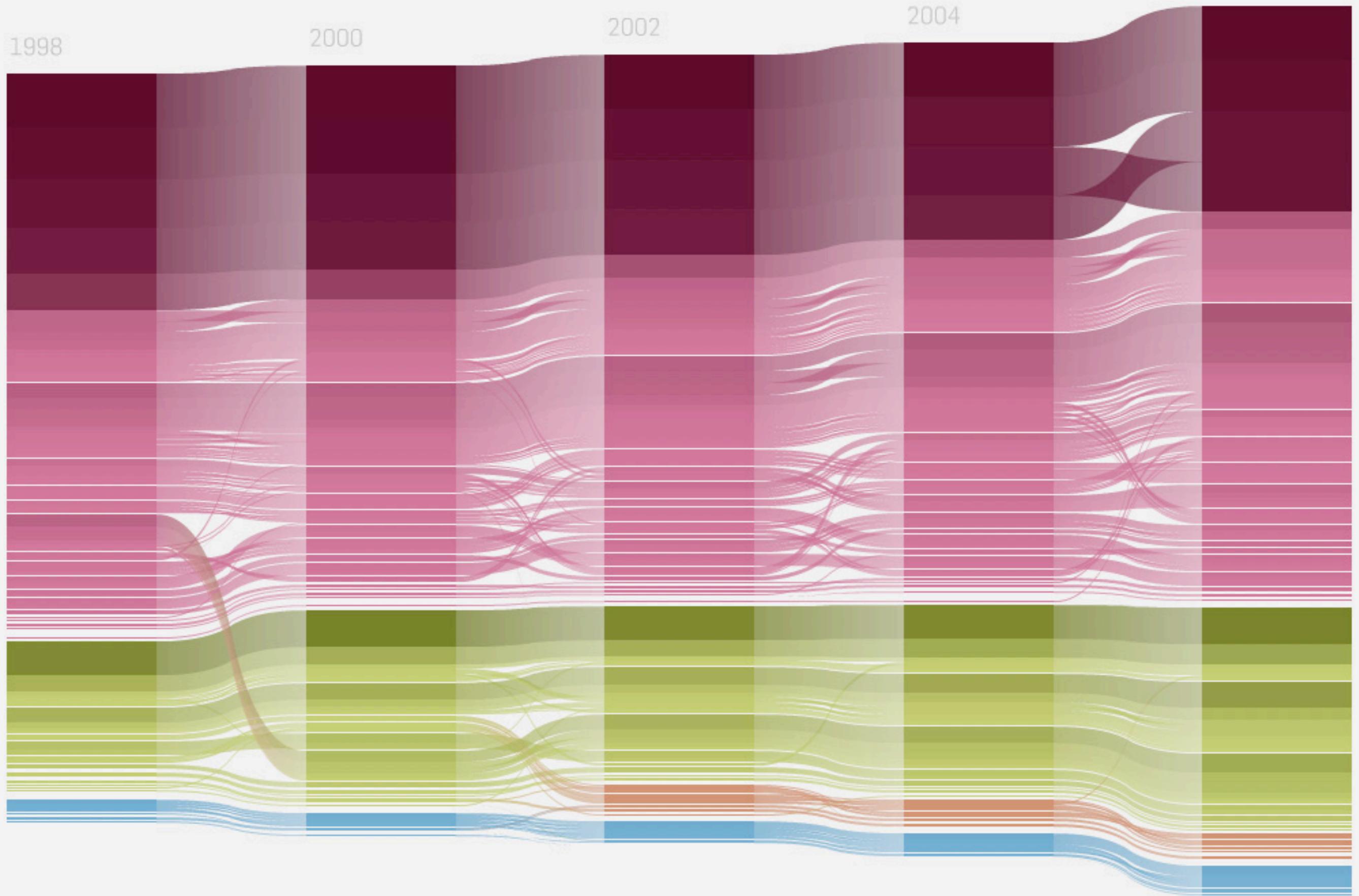
1998

2000

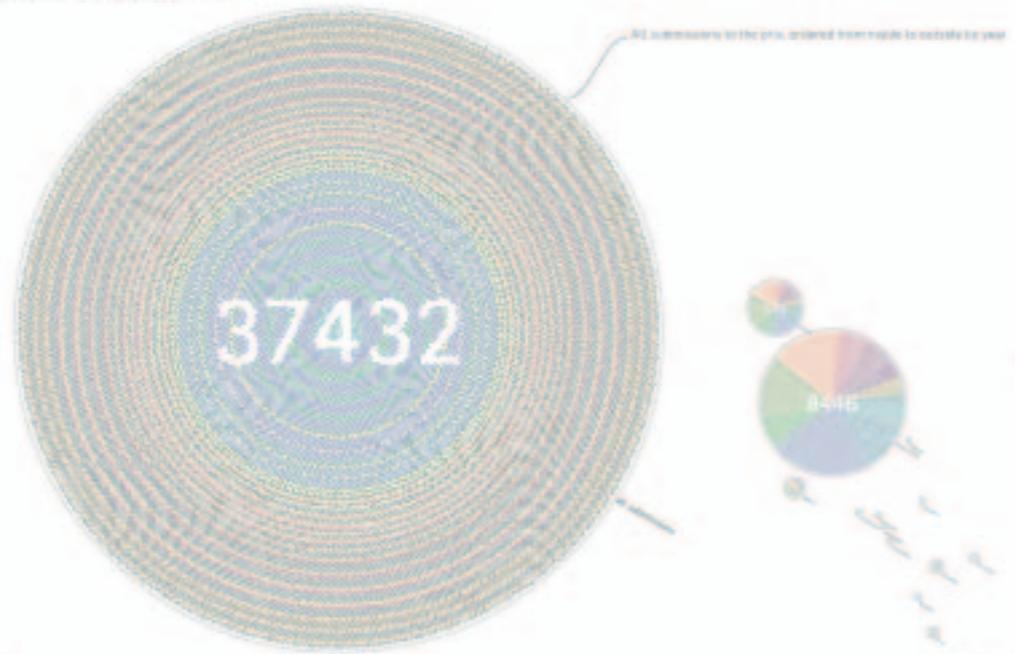
2002

2004

2006



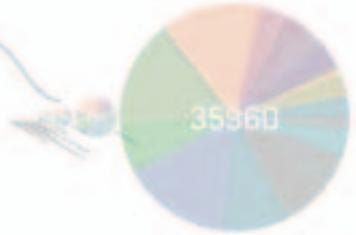
ALL SUBMISSIONS



BY CATEGORY



83% of submissions received a prize



BY PRIZE

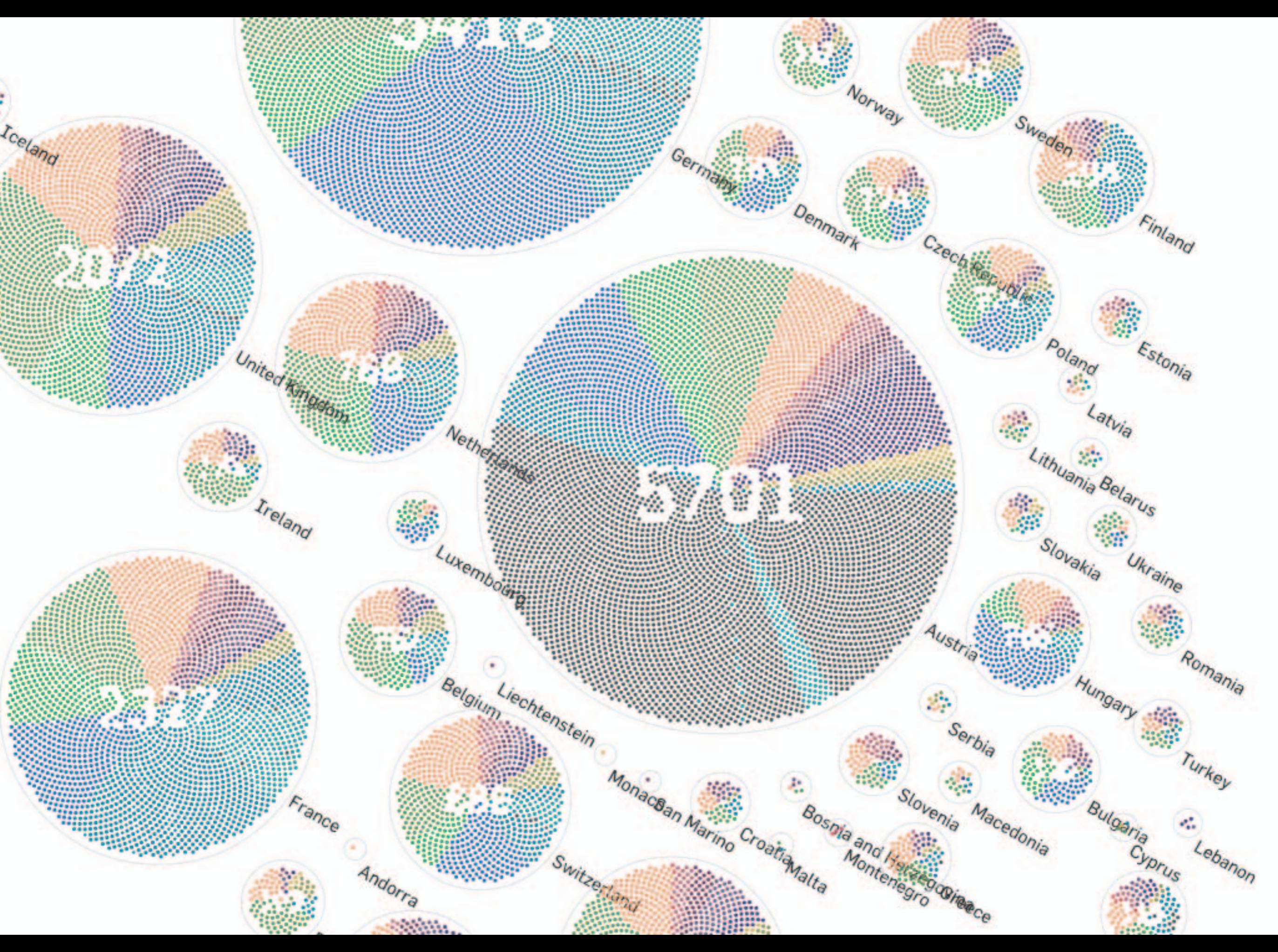
BY COUNTRY

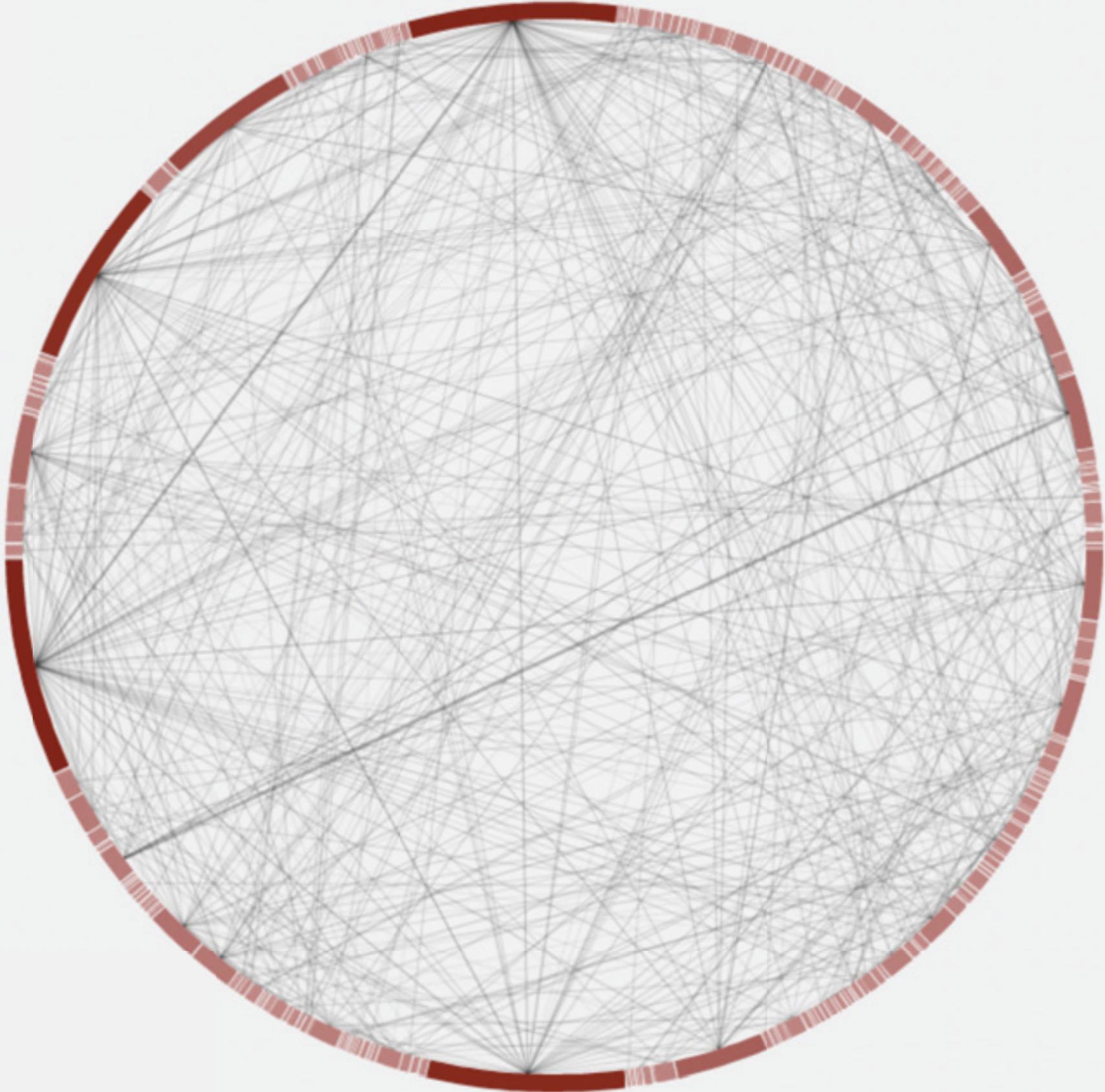


The end of the golden age of Computer Graphics

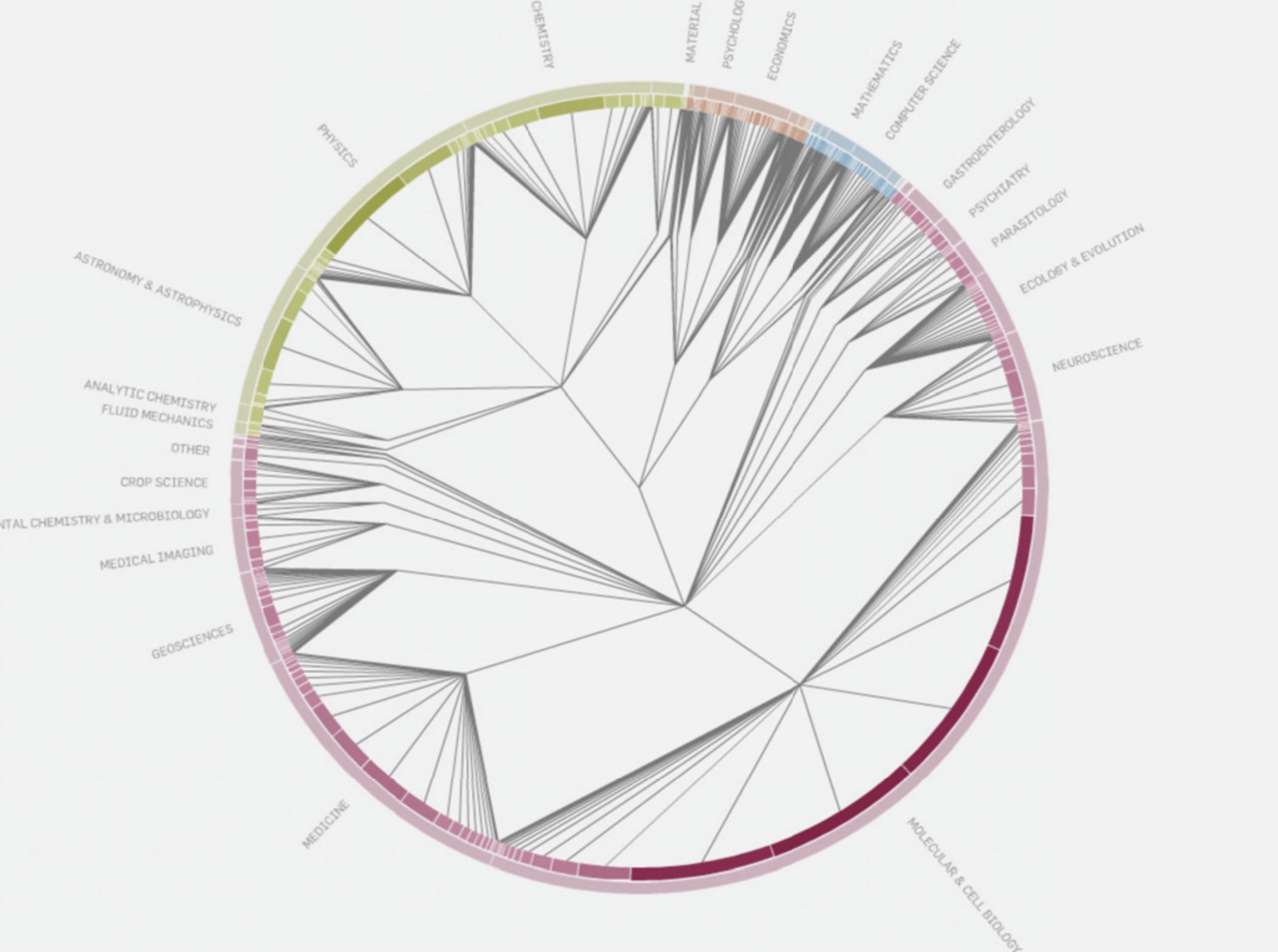


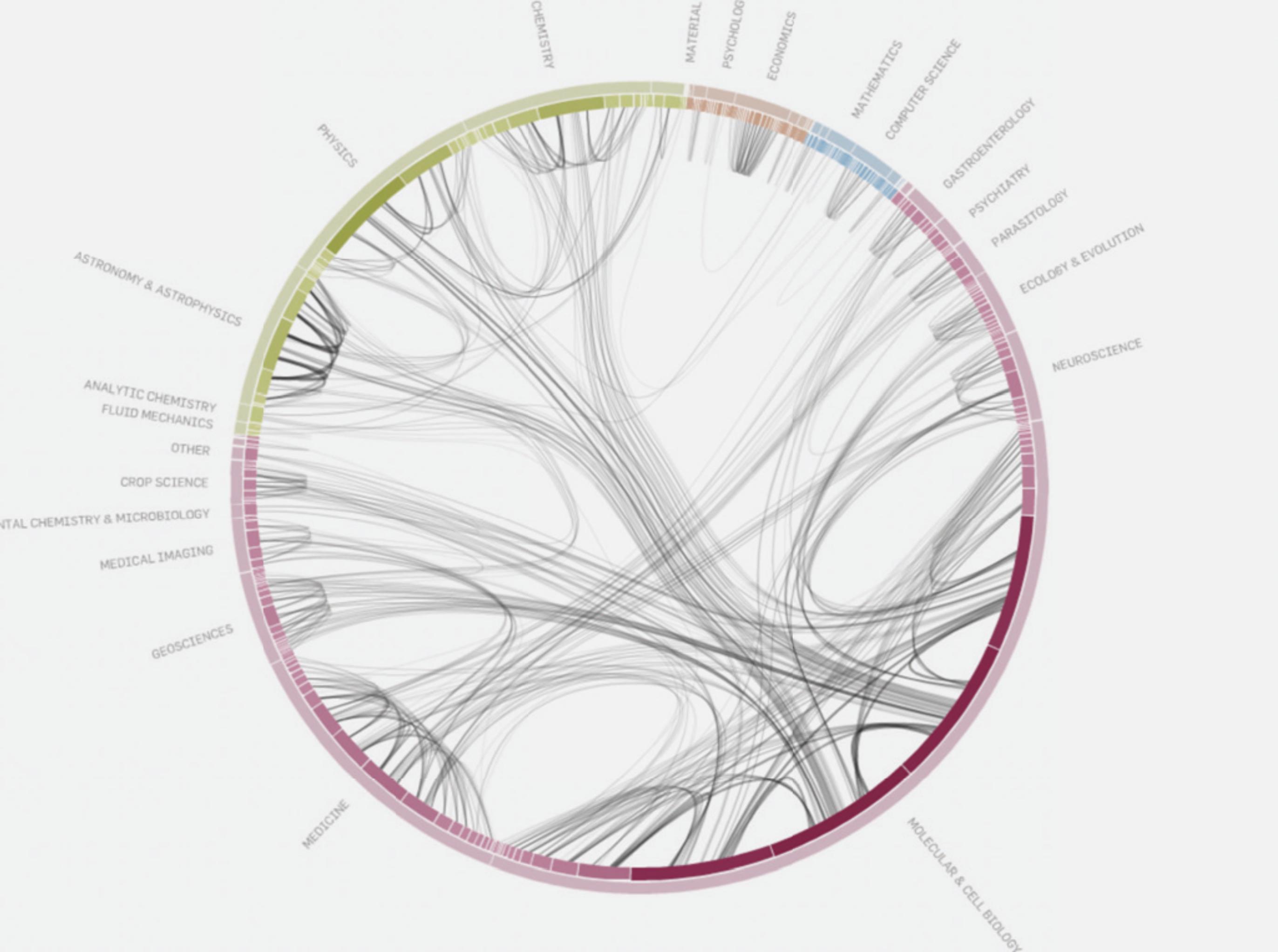
BY YEAR

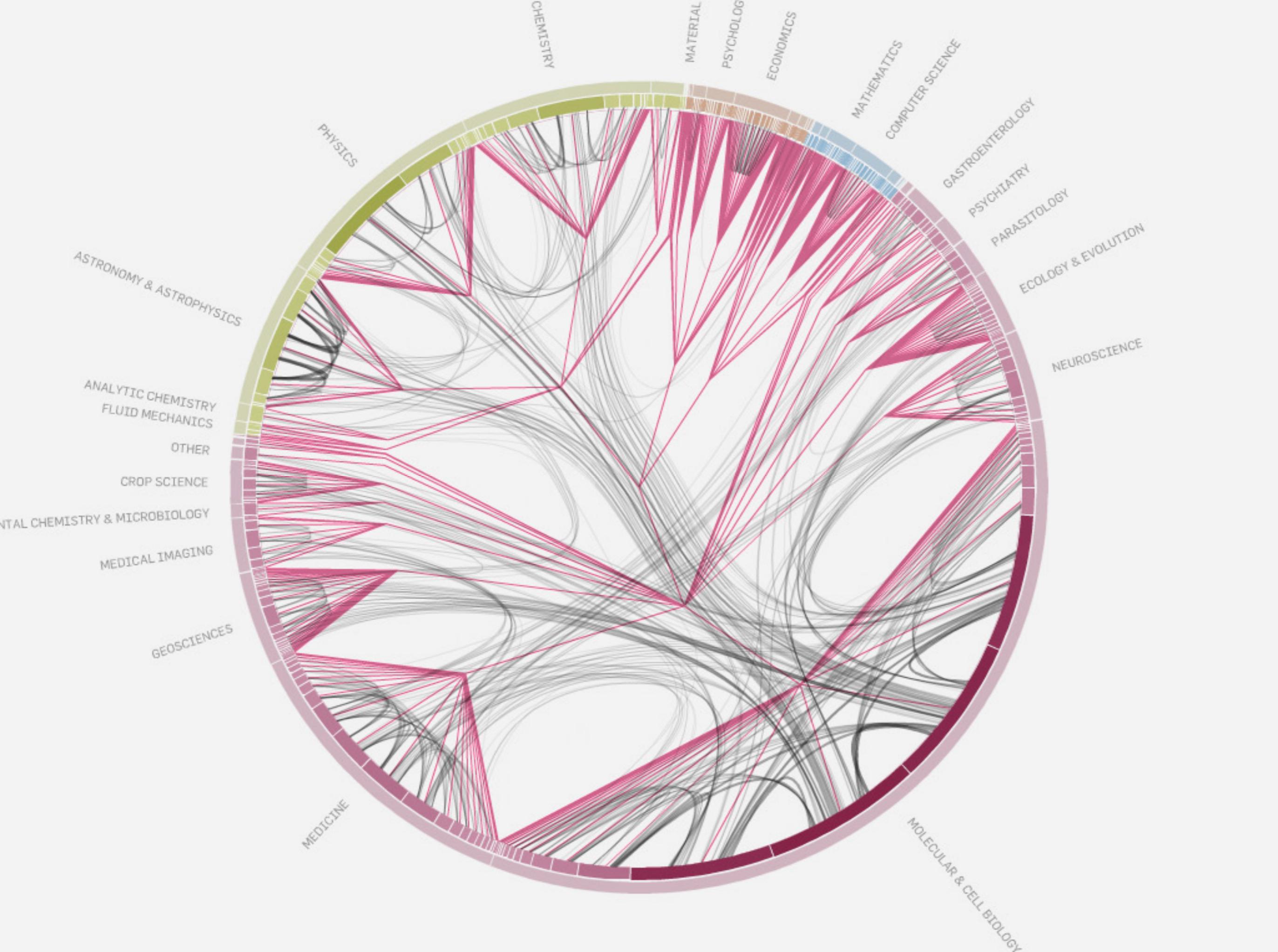








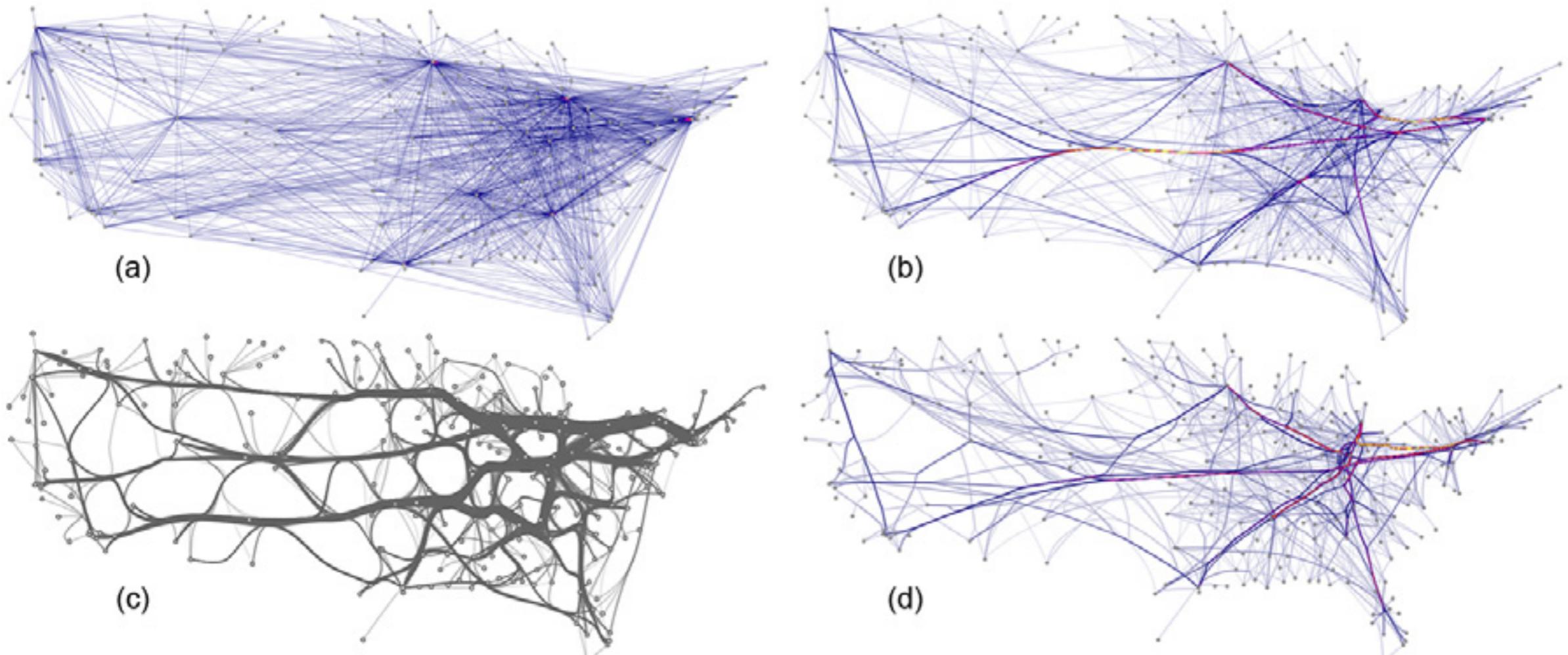




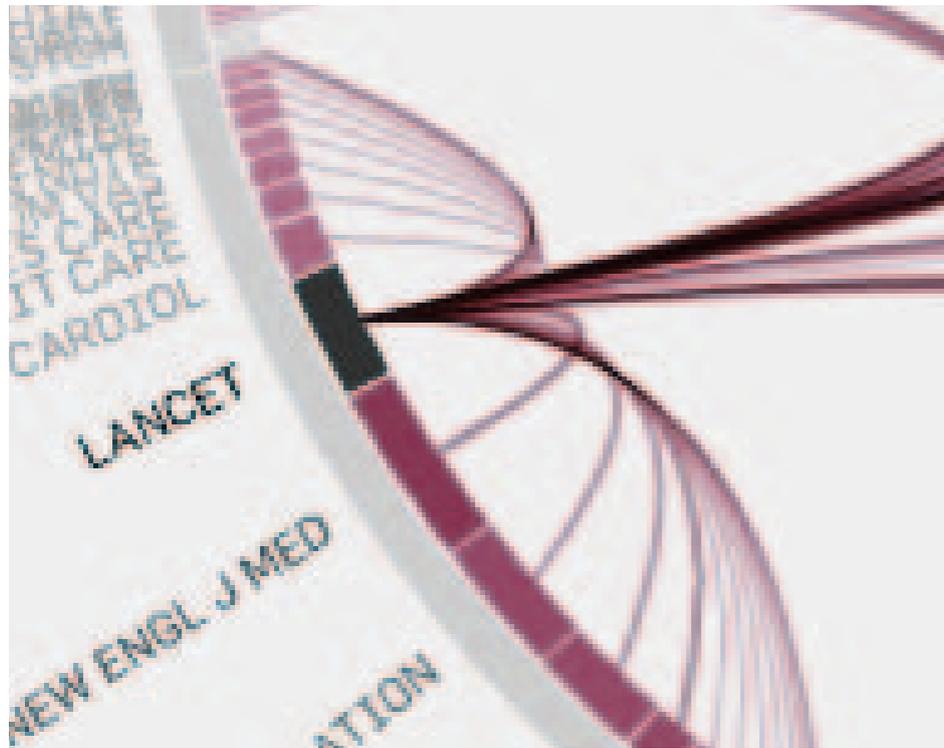
Hierarchical Edge Bundling

Danny Holten: Hierarchical Edge Bundles: Visualization of Adjacency Relations in Hierarchical Data, IEEE Transactions on Visualization and Computer Graphics, Vol. 12, No. 5, September/October 2006

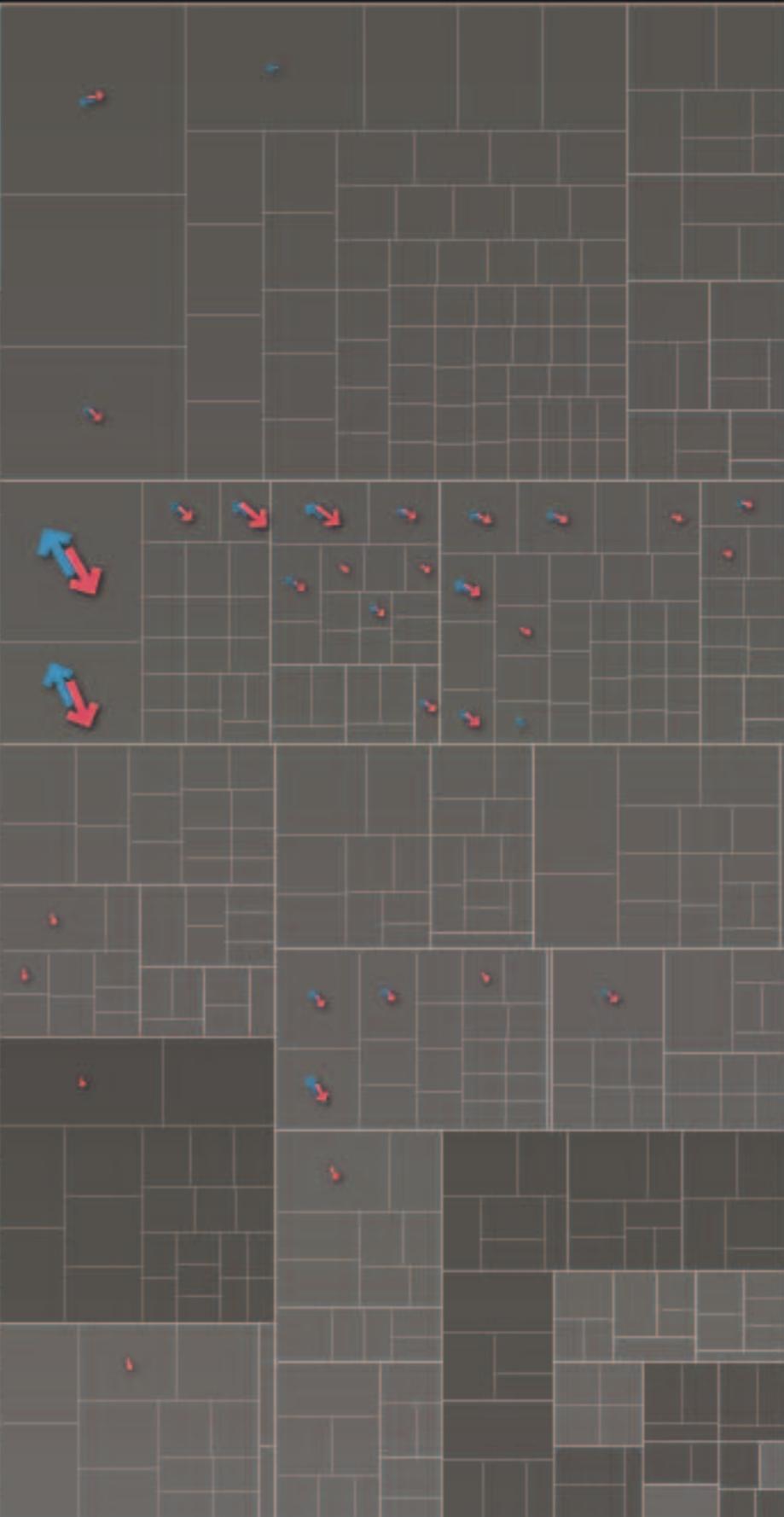
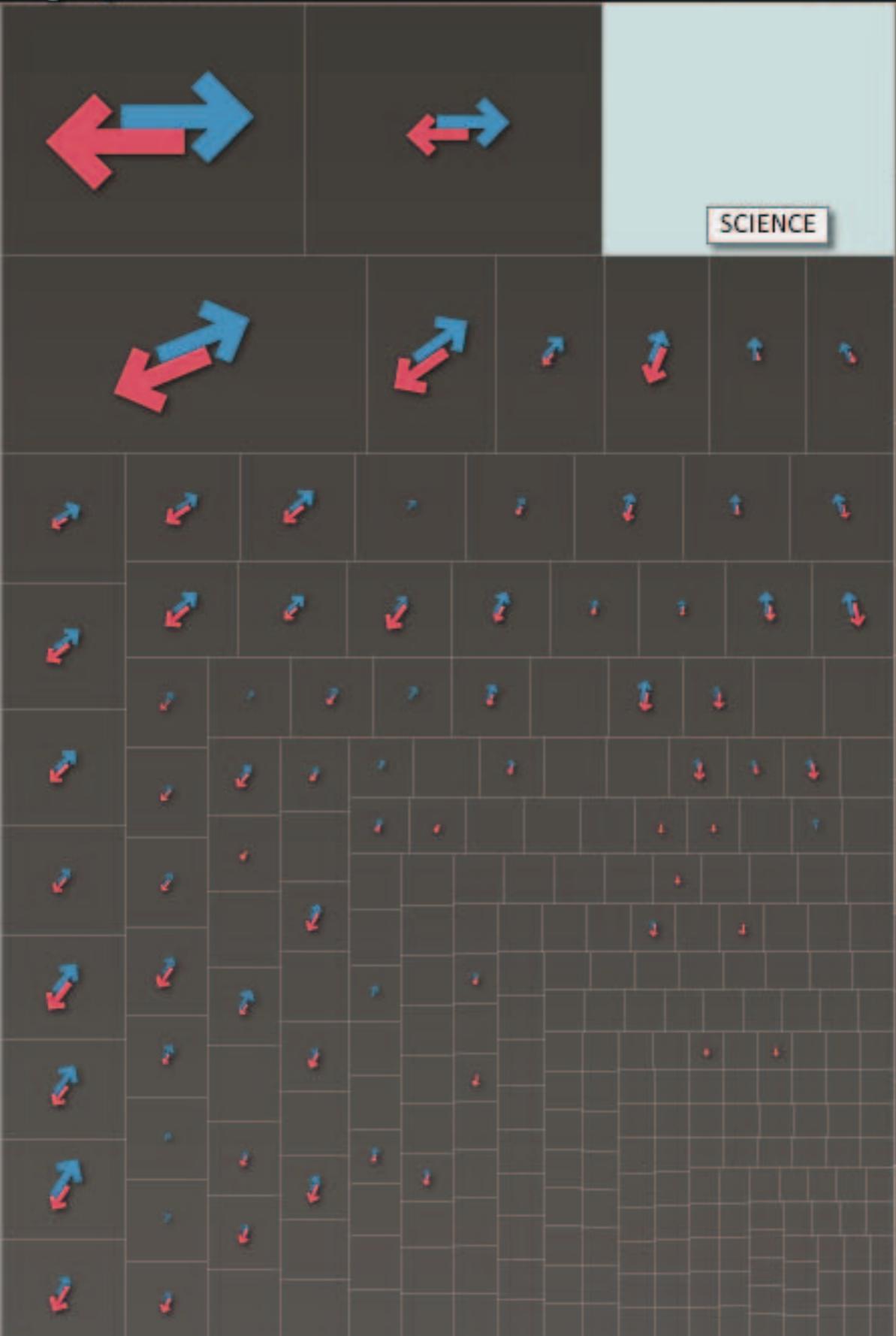
Danny Holten and Jarke J. van Wijk: Force-Directed Edge Bundling for Graph Visualization, Eurographics/ IEEE-VGTC Symposium on Visualization 2009, Volume 28 (2009), Number 3

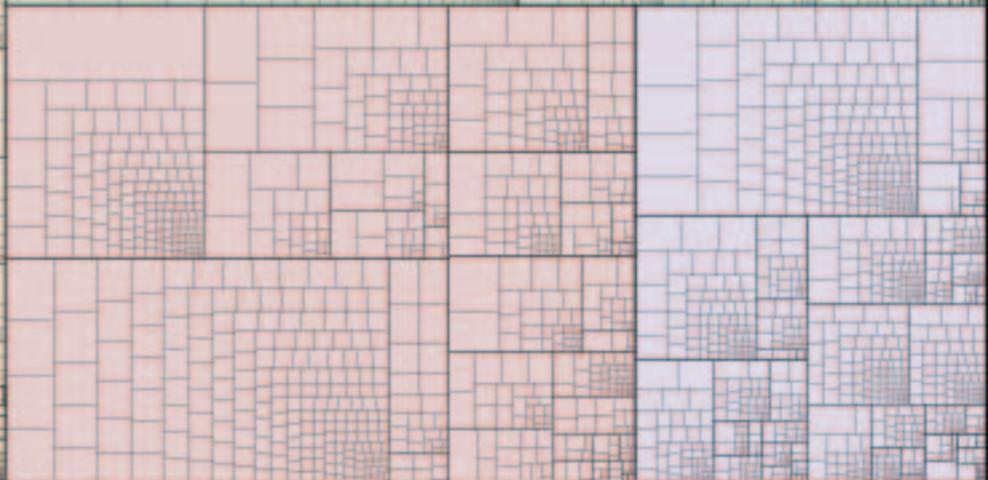
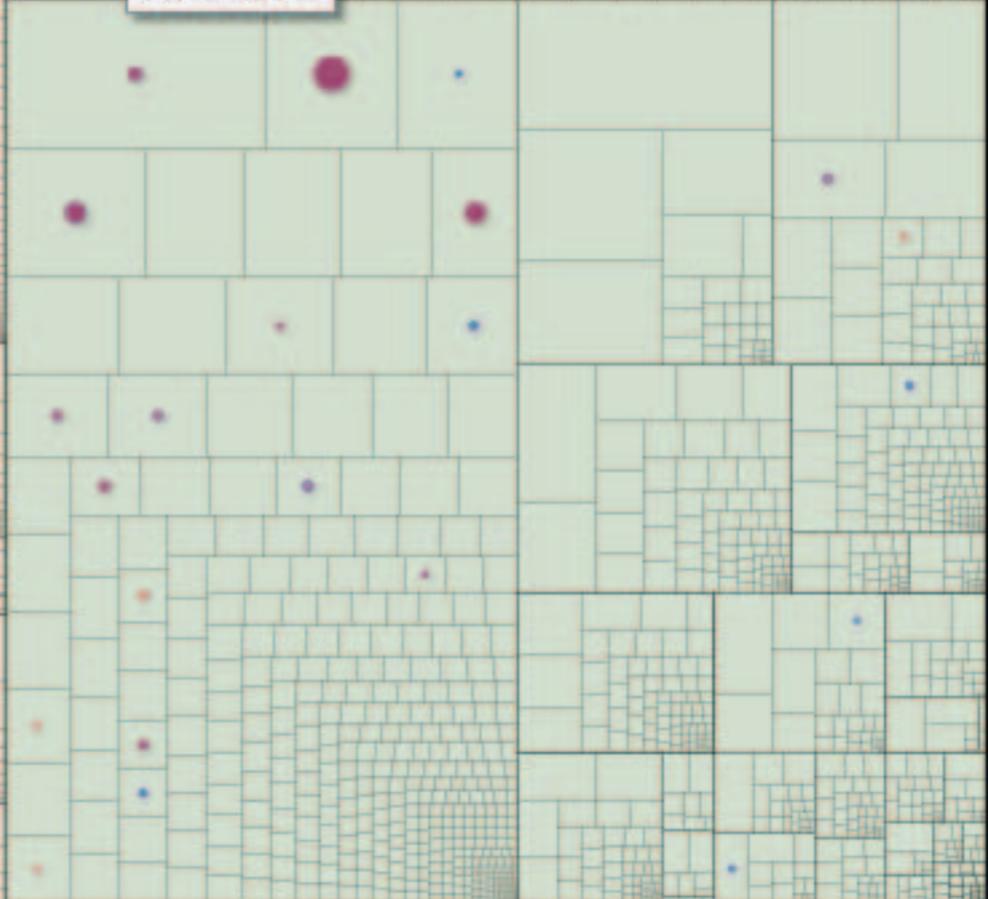
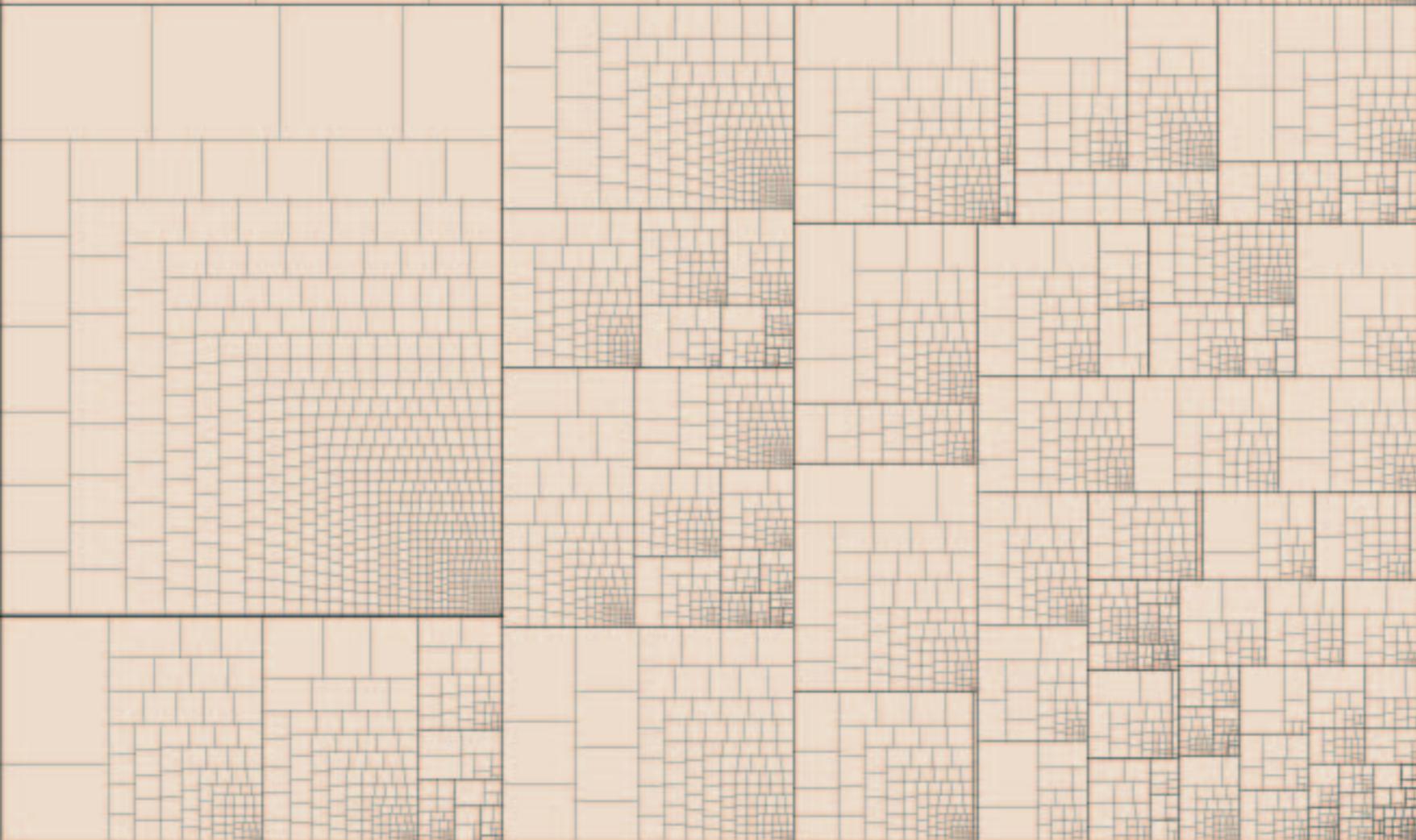
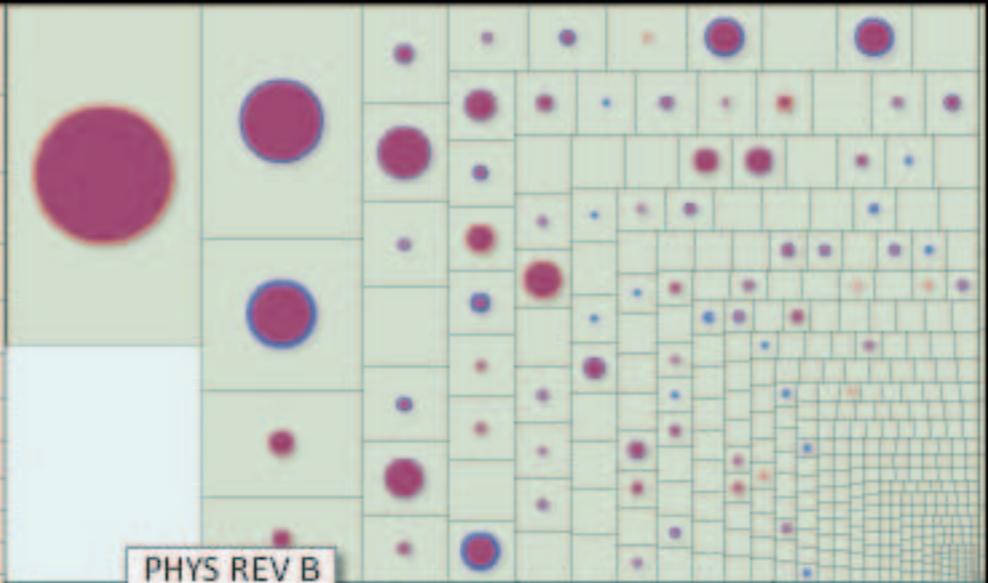
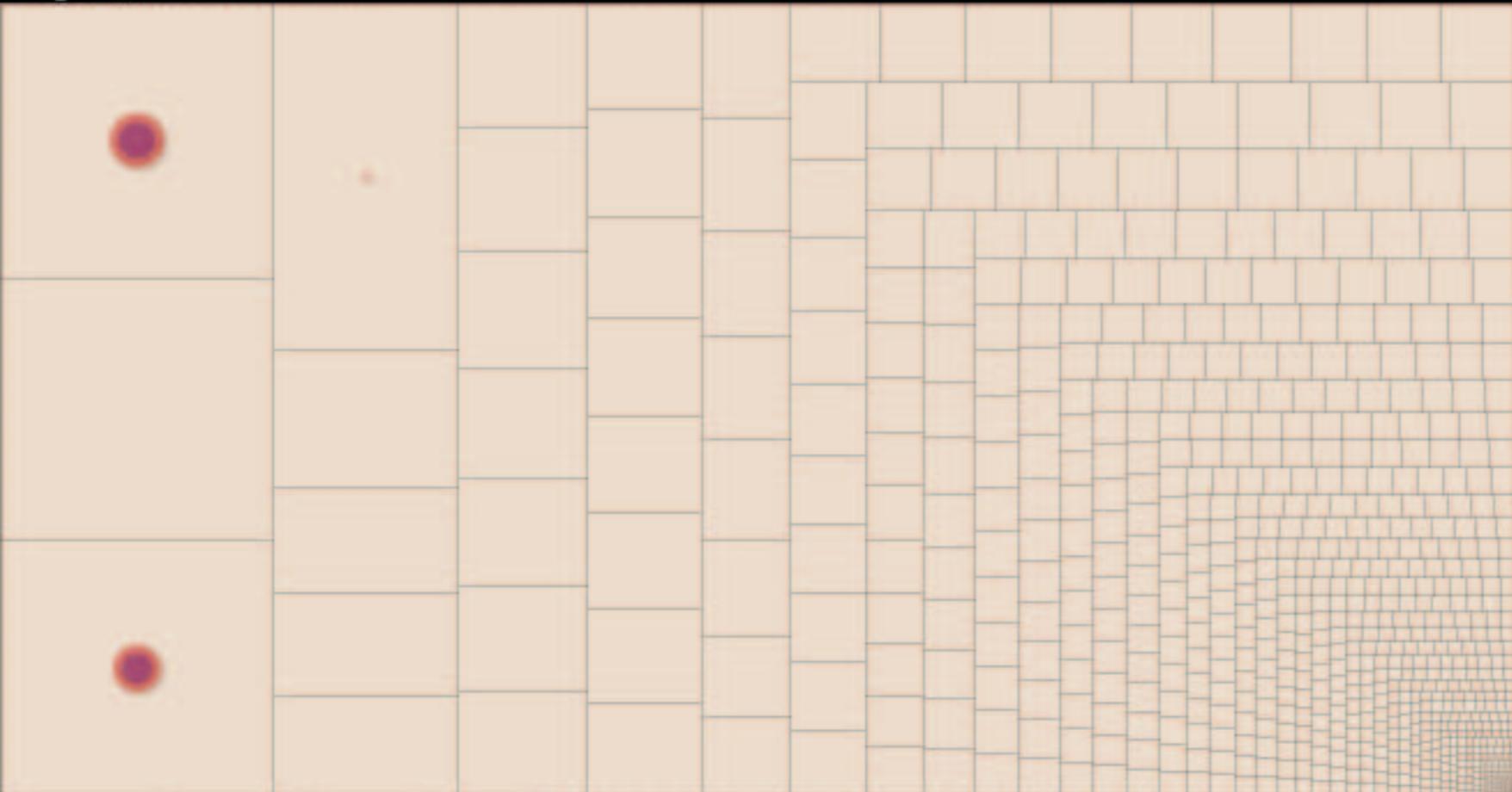


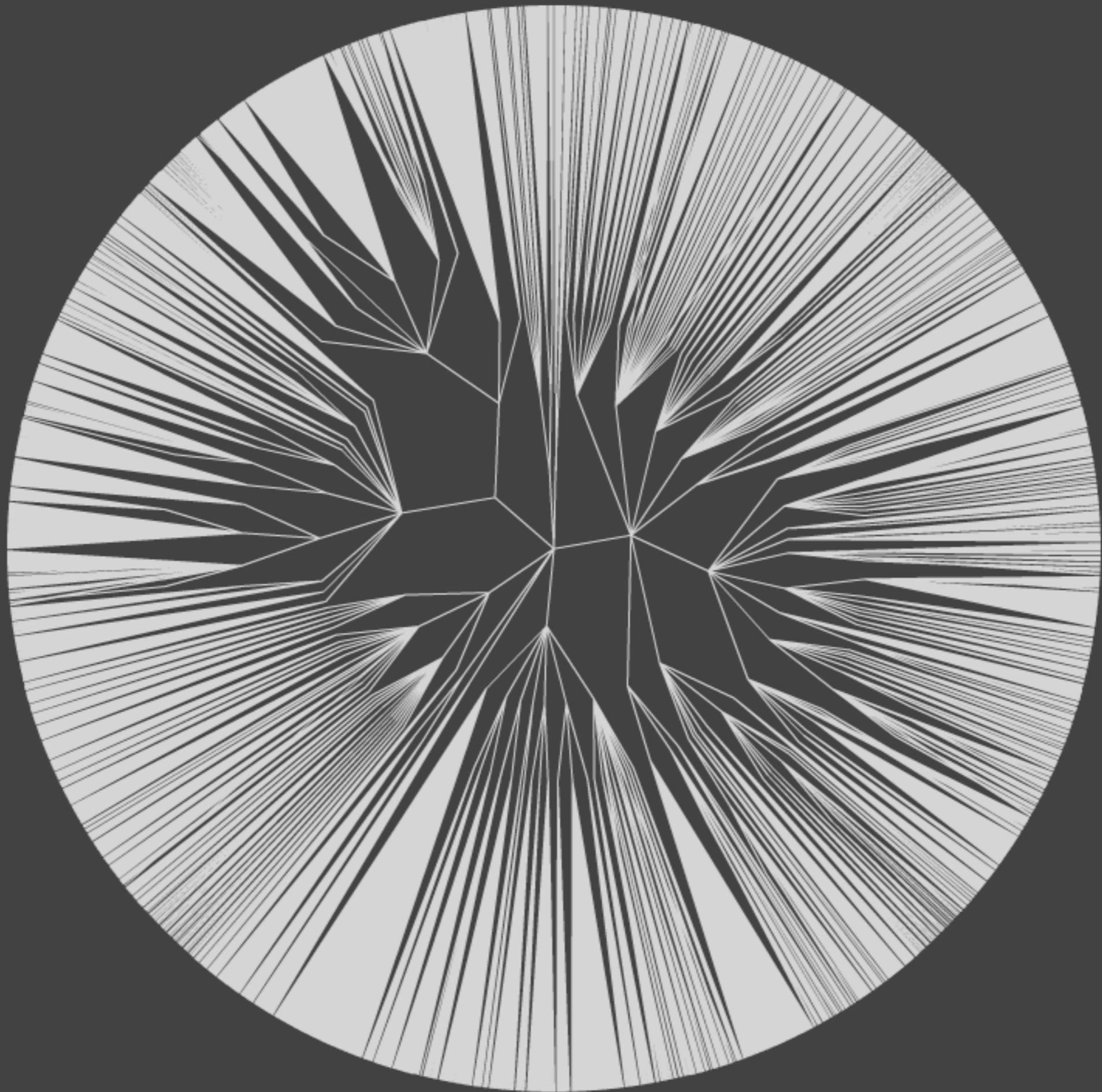
Visual tweaks

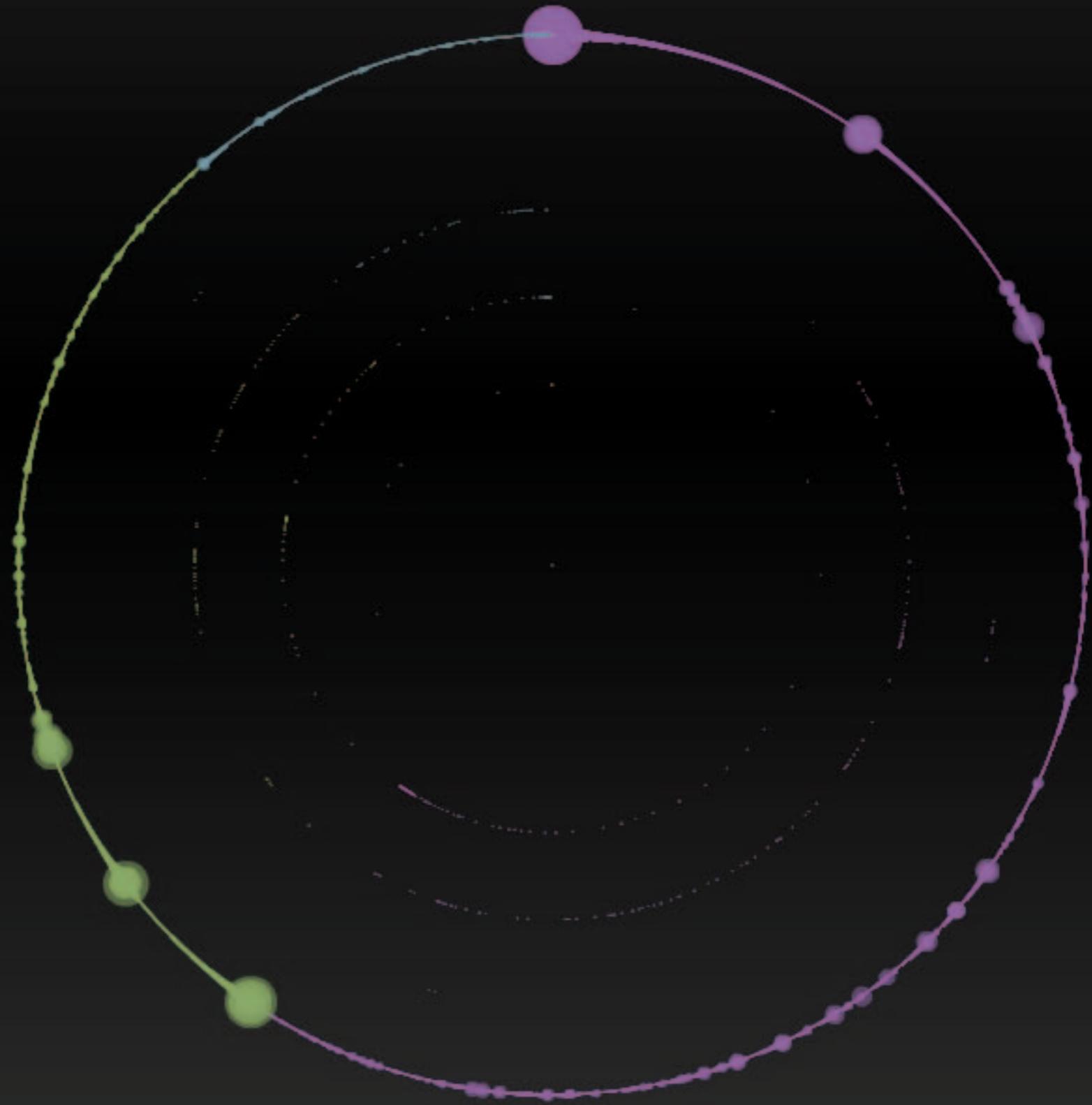


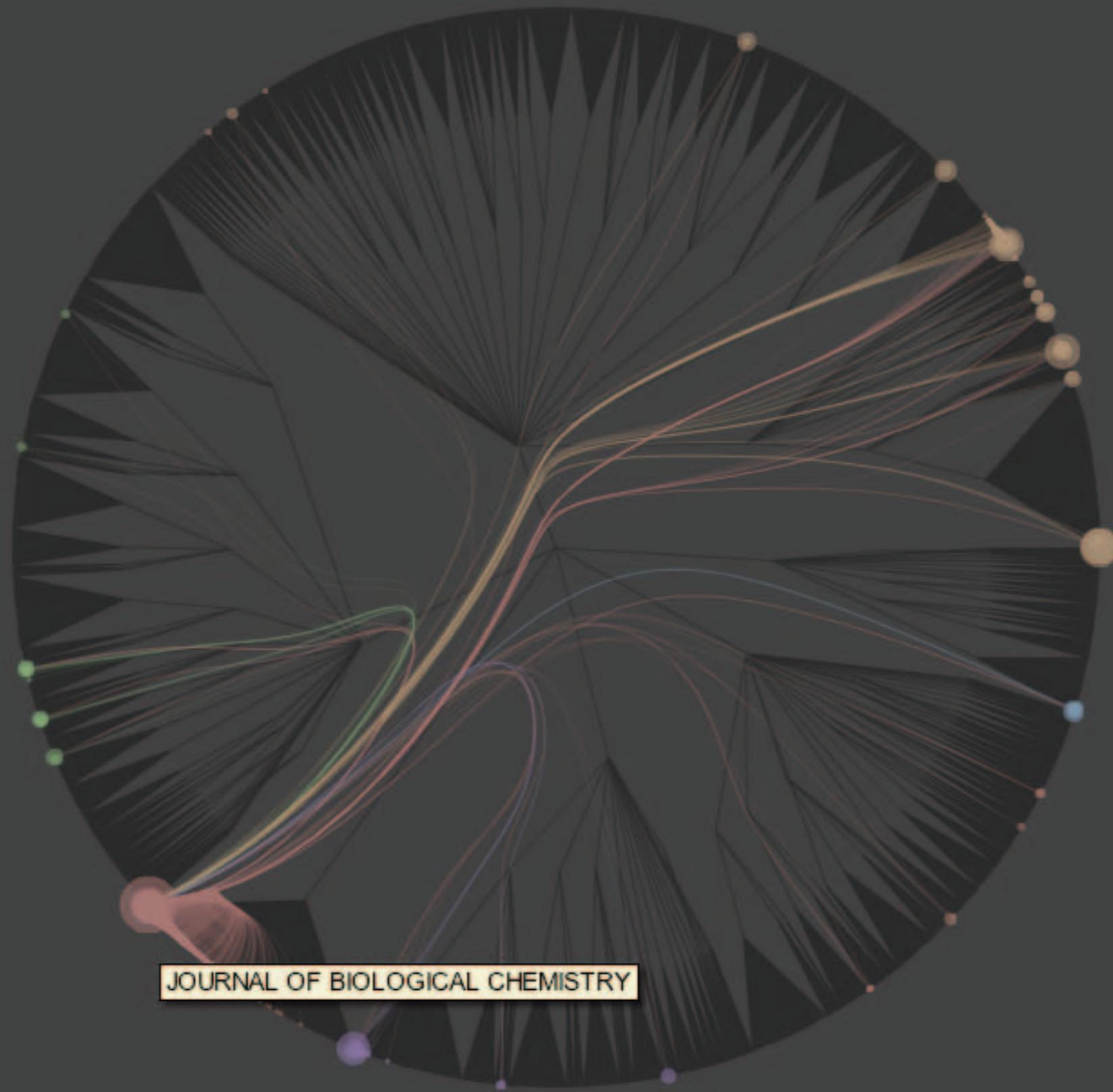
Deleted scenes



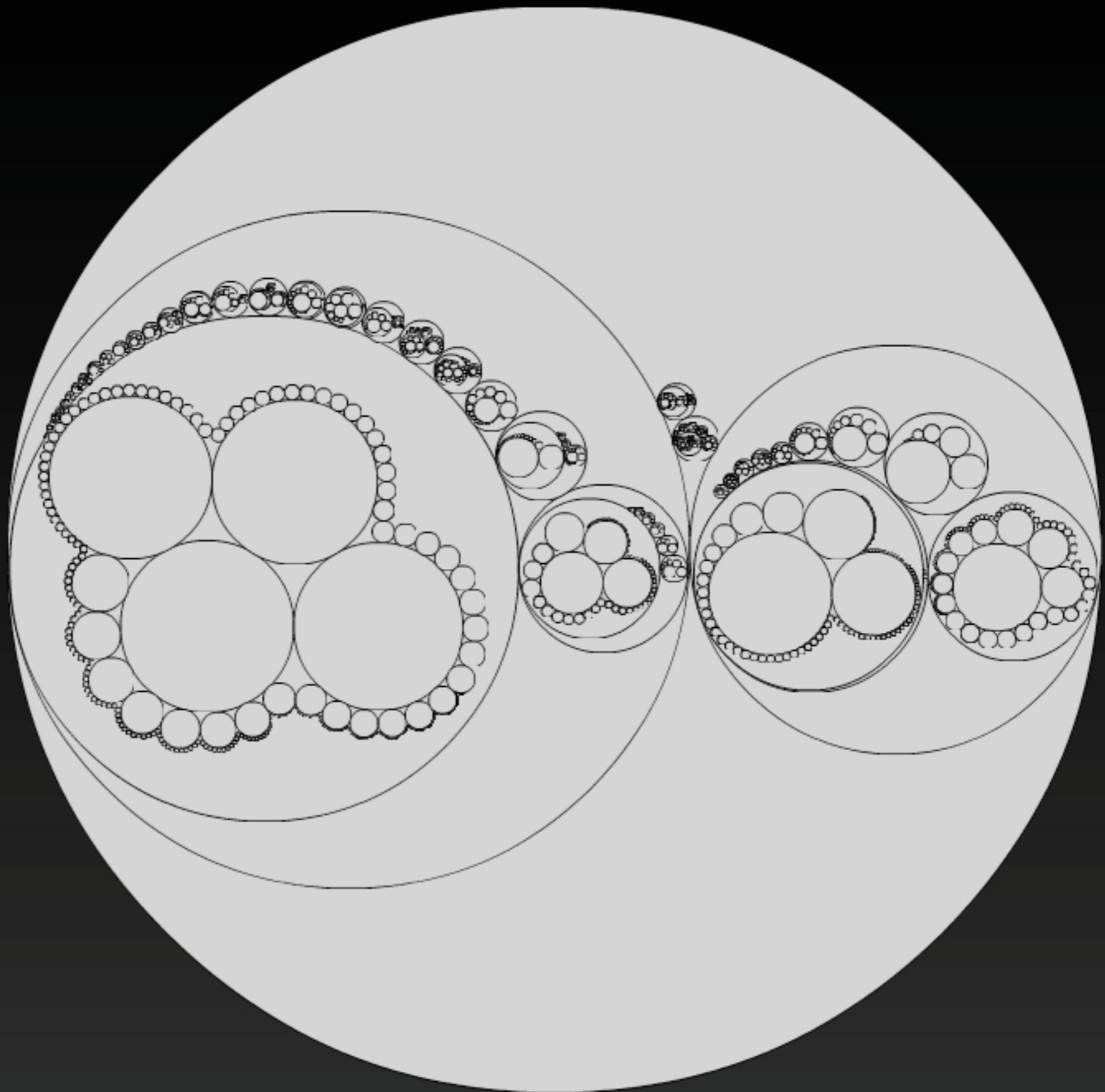


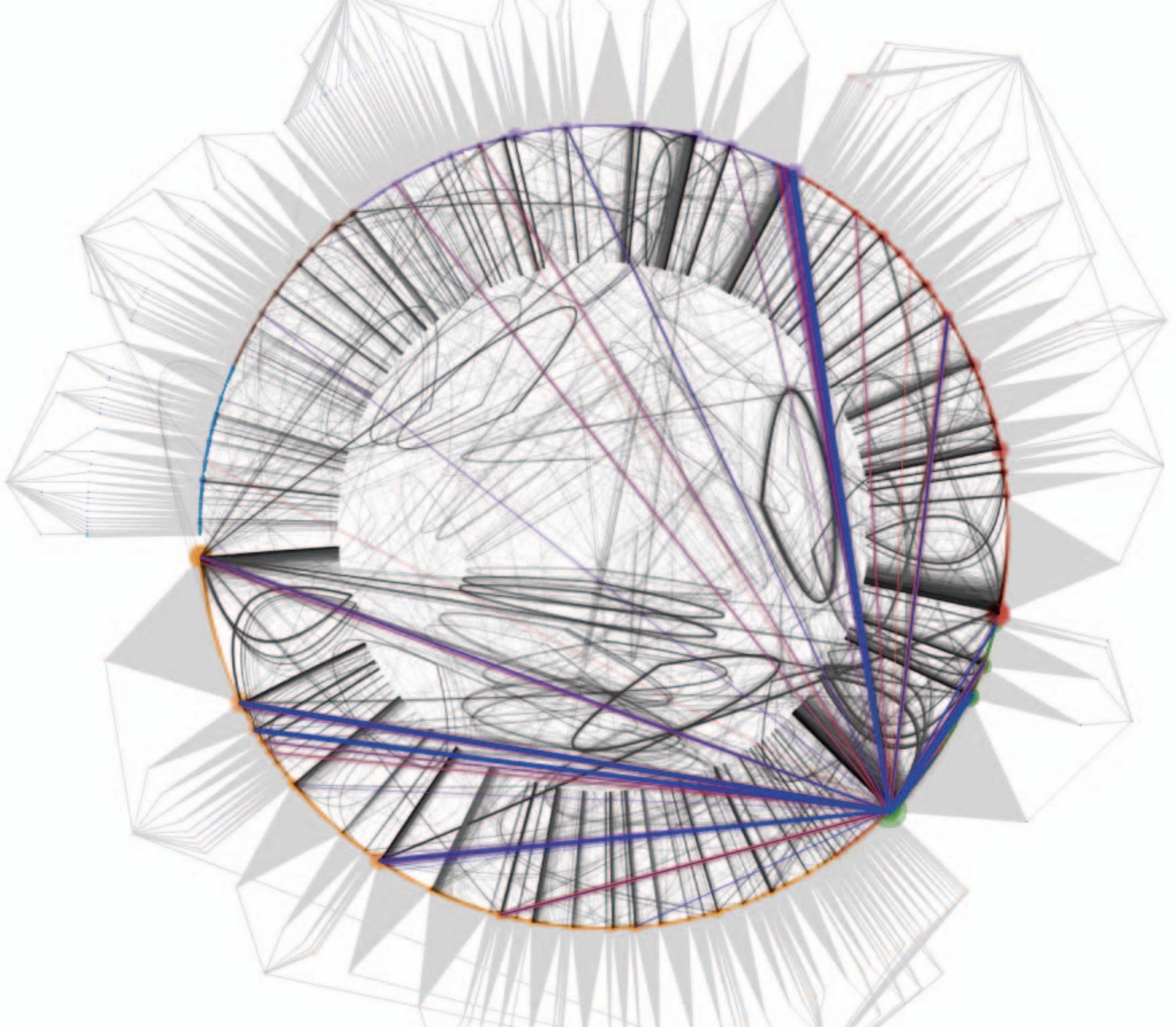




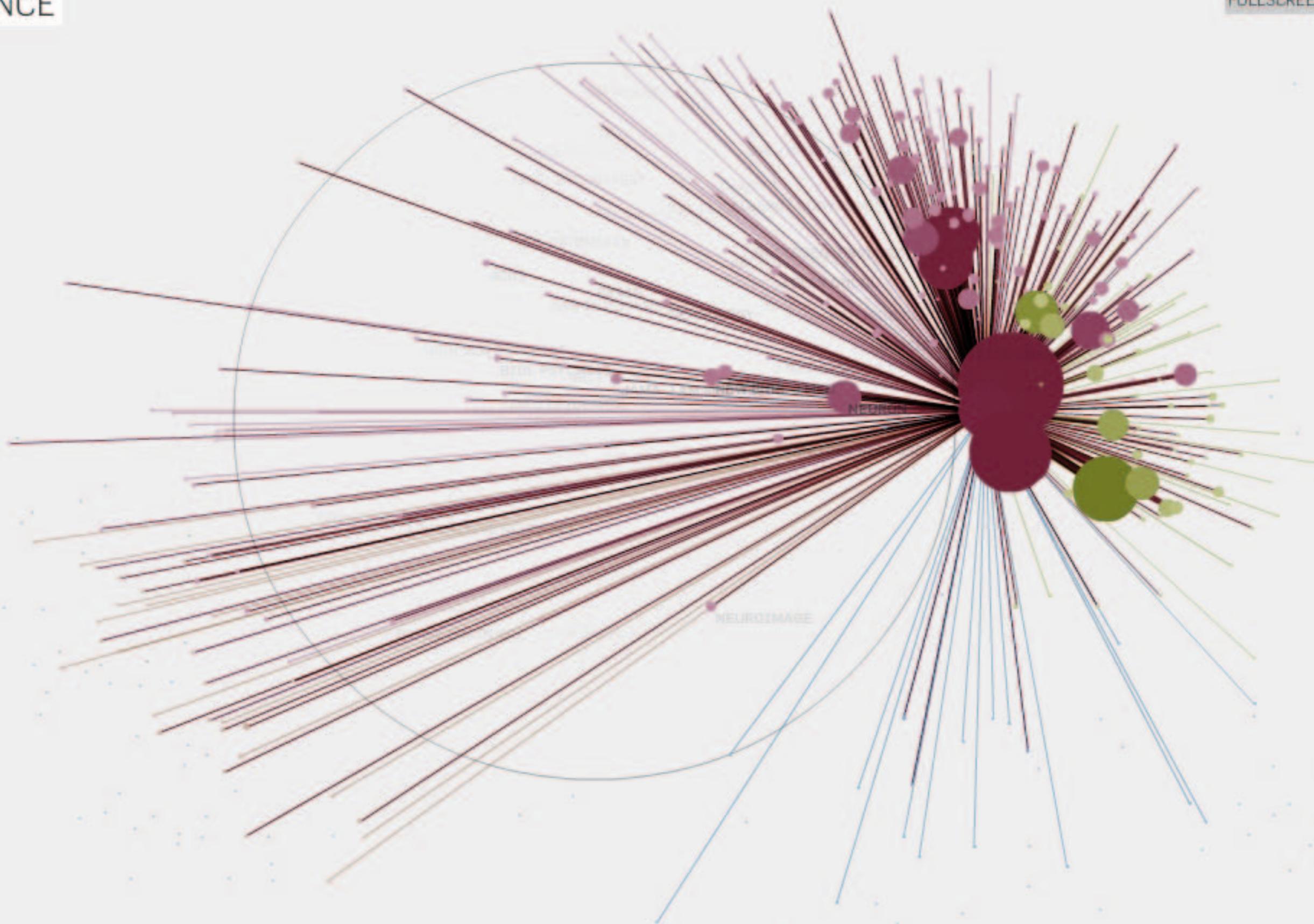


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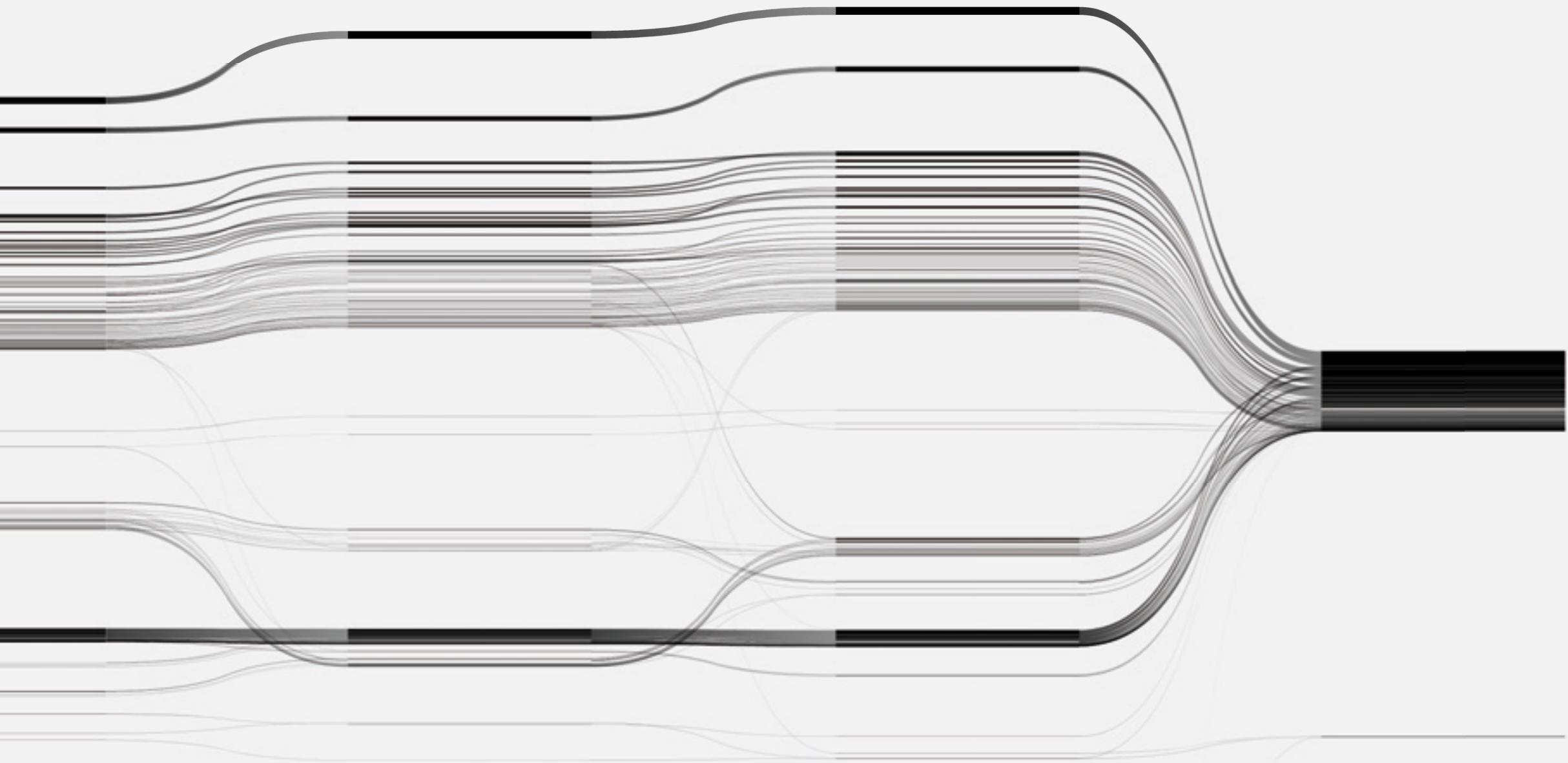




2001

2003

2005



Thank you for listening

Q?A!

Information Aesthetics Showcase

Room 274-277

<http://well-formed.eigenfactor.org>