

# MAPPING THE INTELLECTUAL STRUCTURE OF THE OPEN ACCESS FIELD THROUGH CO-CITATION ANALYSIS

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# Plan

- ⦿ Introduction
- ⦿ Research Questions
- ⦿ Data and Method
- ⦿ Finding and Discussion
- ⦿ Conclusion
- ⦿ Questions

# Introduction

- ◎ Open access;
  - Free access to the full text of articles
  - Permits read, download, copy, distribute, print, search or links to them
  - Allow crawlers to index
  - Pass them as data to software
  - Entitles anyone to use them for any other lawful purpose
  - **WITHOUT FINANCIAL, LEGAL OR TECHNICAL BARRIERS**

# Introduction

- ◎ Citation databases and open access
- ◎ New paradigm of scholarly communication
- ◎ Open access is major subject of many works
- ◎ Major knowledge producers, significant journals and prominent articles in the open access field

# Research Questions

- ◎ The main aim; evaluate the open access field using scientific visualization techniques.
  - What are the prominent articles in the open access field?
  - Which authors are major knowledge producers?
  - Which journals are cited the most frequently?
  - Which keywords are used most often in the open access field?

# Data and Method

- ⦿ Topical search on Web of Science
  - Open access
- ⦿ A total of 281 journal articles under the subject category of “information science and library science”
- ⦿ CiteSpace was used to produce co-citation networks

# Co-Citation Analysis

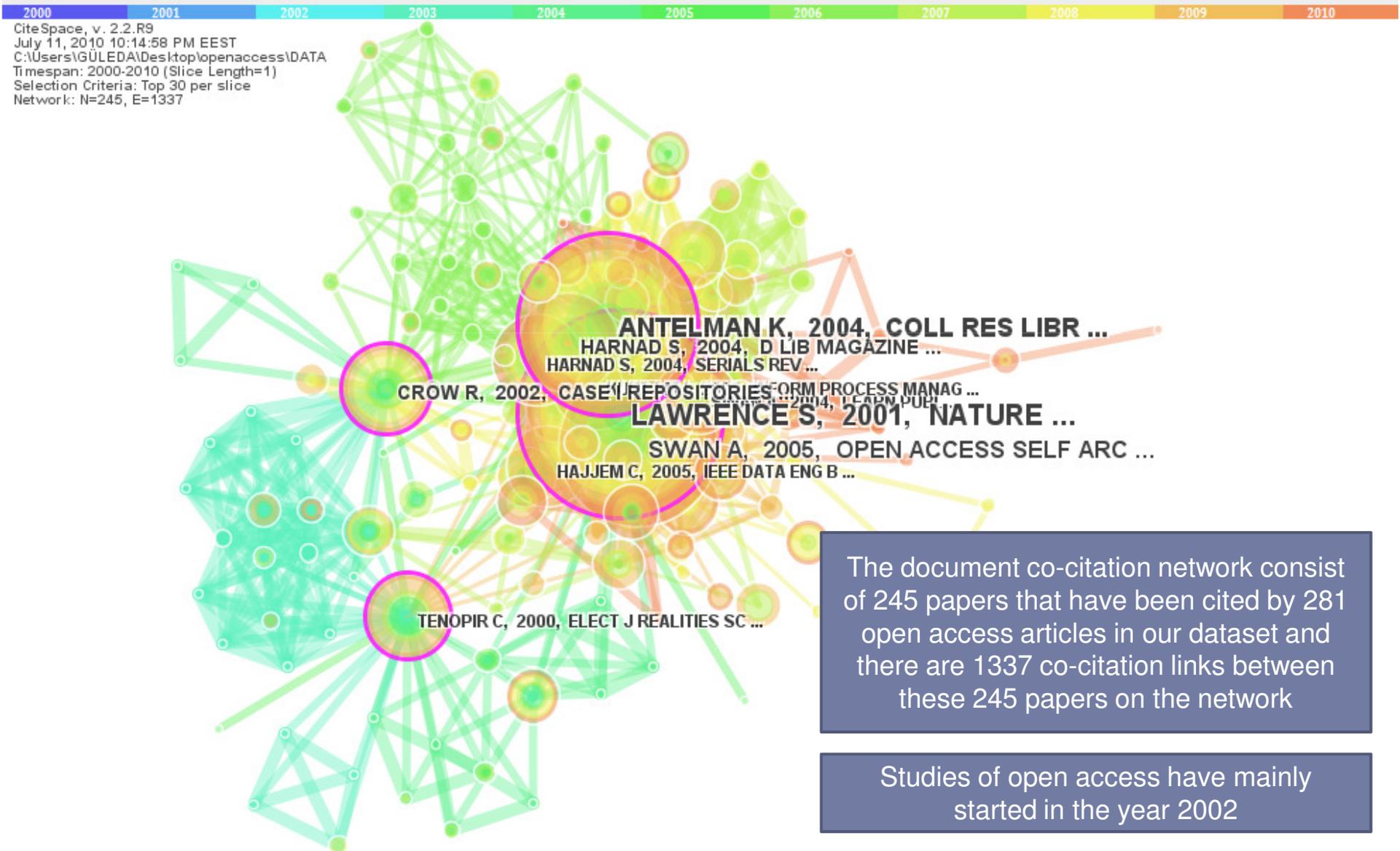
- ◎ Identify the groups of scientists and their publications from which conclusions can be drawn about the inner structure of research disciplines, schools or paradigms
  - Document co-citation analysis
  - Author co-citation analysis
  - Journal co-citation analysis
  - The network of keywords

# Findings

- ◎ The number of papers has increased considerably over the years;
  - Budapest Open Access Initiative in 2002
  - Bethesda Statement of Open Access Publishing in 2003
  - Berlin Declaration of Open Access

Year	# of articles	# of times cited
2000	2	14
2001	0	0
2002	7	20
2003	11	48
2004	13	136
2005	27	108
2006	36	128
2007	62	148
2008	47	91
2009	55	33
2010	21	5
<b>Total</b>	<b>281</b>	<b>730</b>

# Document Co-Citation Network



# Document Co-Citation Network

- ◎ Most prominent sources
  - The letter written by **Lawrence**
    - “Free online availability substantially increases a paper’s impact”, 2001
  - Journal articles
    - By **Kristin Antelman**
      - “Do open Access articles have a greater research impact”, 2004
    - By **Alma Swan Sheridan Brown**
      - Open access self-archiving: An author study”, 2005

# Document Co-Citation Network

- ◎ Papers by **Stevan Harnad**
  - “The access/impact problem and the green and gold roads to open access”, 2004
  - “Comparing the impact of open access (OA) vs. non-OA articles in the same journals”, 2004
- ◎ By **Raym Crown**
  - “The case for institutional repositories: a SPARC position paper”, 2002
- ◎ By **Michael J. Kurtz**
  - “The effect of use and access on citations”, 2005
- ◎ By **Chawki Hajjem**
  - “Ten-year cross-disciplinary comparison of the growth of open access and how it increases research citation impact”, 2005
- ◎ The book written by **Carol Tenopir** and **Donald King**
  - “Towards Electronic Journals: Realities for Scientists, Librarians, and Publishers”, 2000

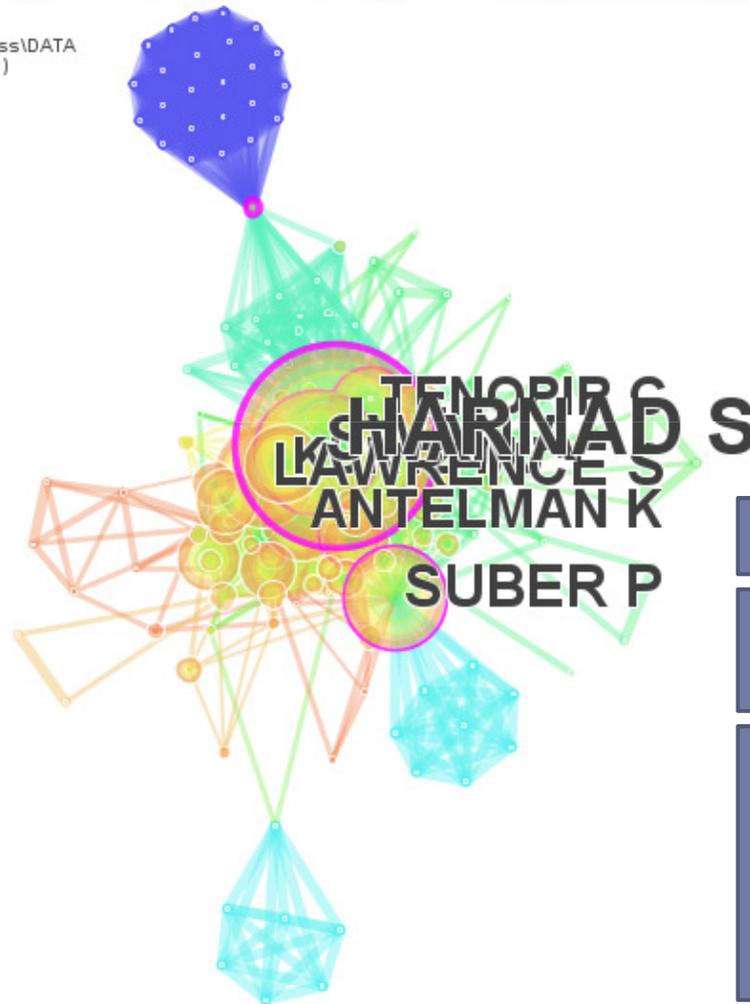
# Document Co-Citation Network

- ⊙ Couple of years' worth of time lag between publication and citation years of papers
- ⊙ Lawrence's letter published in 2001
  - Generating citations after 2004
- ⊙ Antelman's article published in 2004
  - Generating citations after 2006
- ⊙ Open access is still an evolving field

# Author Co-Citation Network

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

CiteSpace, v. 2.2.R9  
July 11, 2010 10:32:33 PM EEST  
C:\Users\GÜLEDA\Desktop\openaccess\DATA  
Timespan: 2000-2010 (Slice Length=1)  
Selection Criteria: Top 30 per slice  
Network: N=194, E=1350



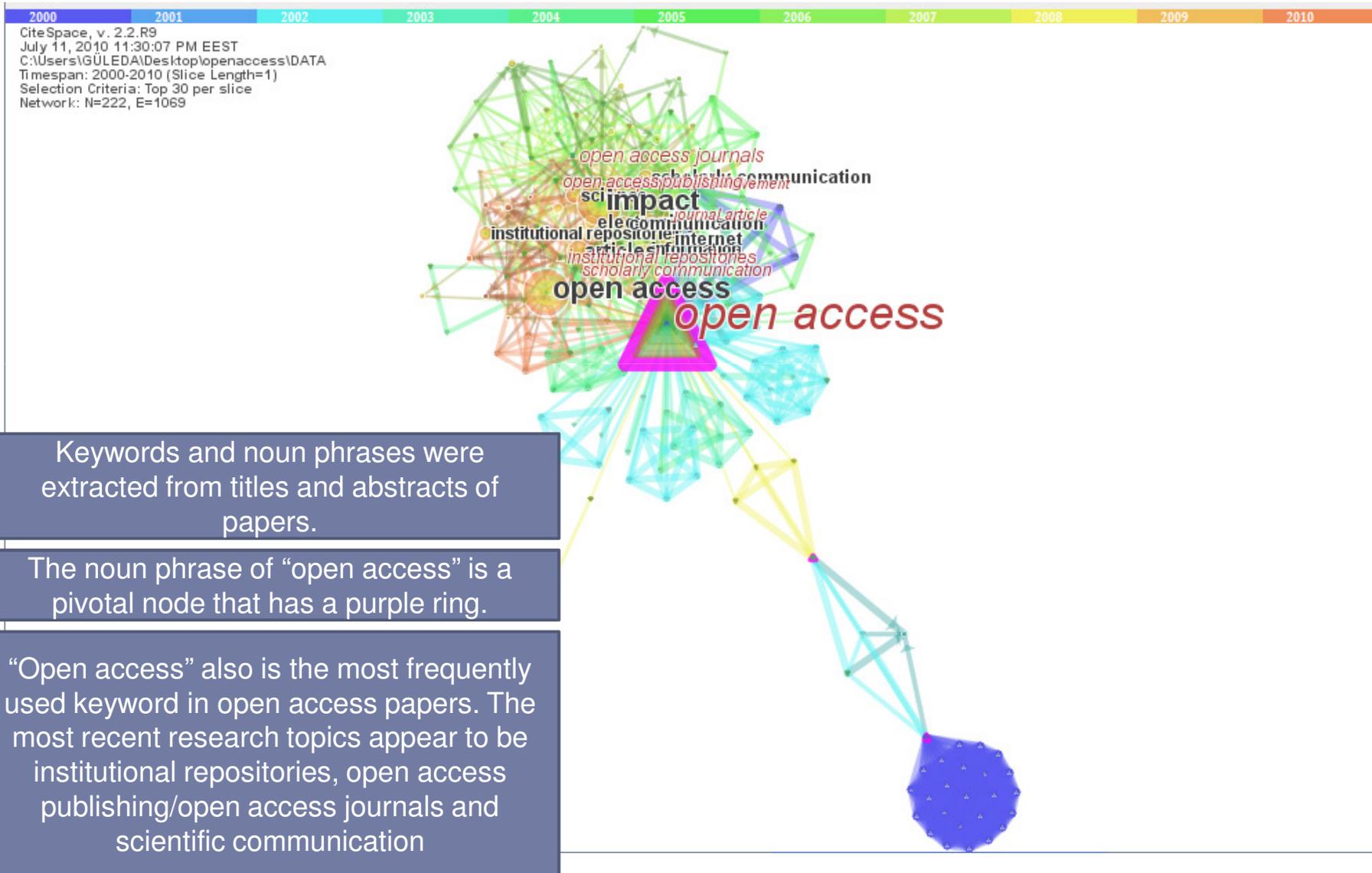
Steven Harnad has the largest circle.

Most of the citations to the prominent articles were made after 2005.

The colors of the outermost ring of almost all the authors are orange, indicating that many of these authors continue to publish papers on open access which continue to be cited.



# Network of Keywords



# Conclusions

- ⦿ Findings of our study show that open access is a nascent and rapidly emerging field.
- ⦿ Findings can be used to identify landmark papers along with their impact in terms of providing different perspectives and engendering new research areas.

Questions?

Thanks...

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