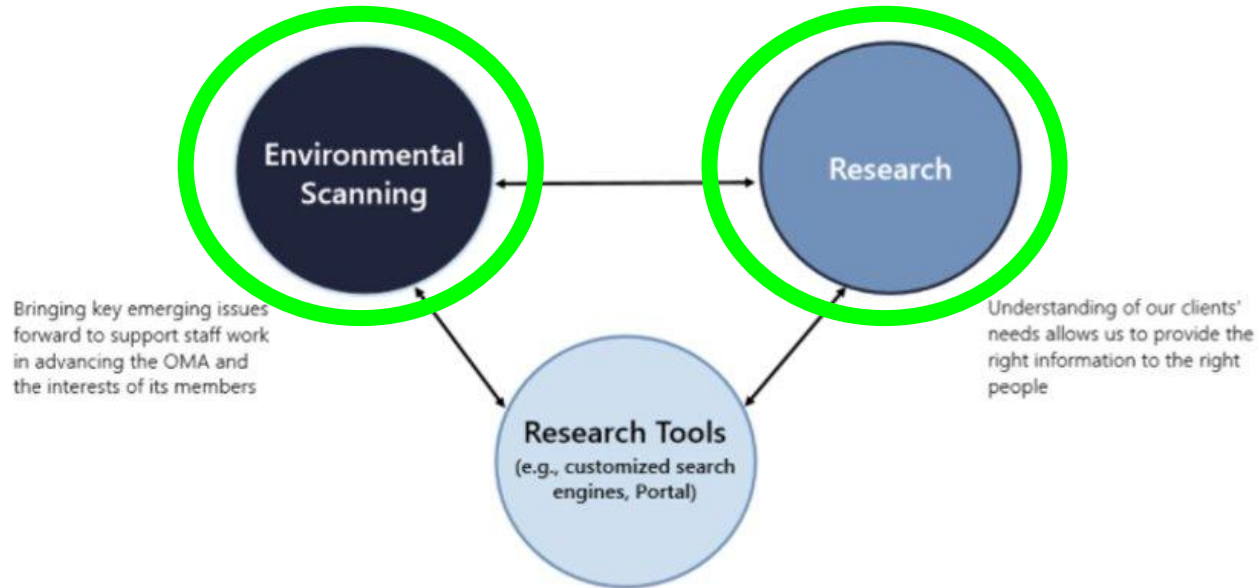


Applied Bibliometric Mapping for Searching using Citation Gecko, Dimensions & VosViewer

Brett Williams
Senior Research Analyst

Scan Artists' Approach to Research

OMA EPR Research Group



Building research tools for OMA staff, founded on our environmental scanning and research work

Nimble

Integrated

Comprehensive

Efficient




Nice people doing great work

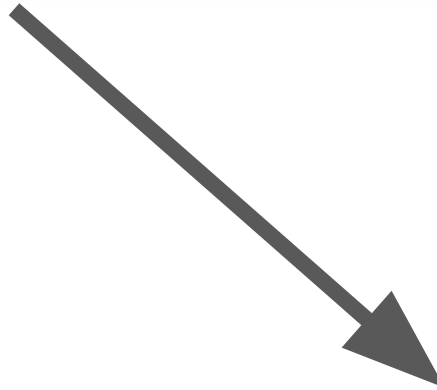
A photograph of a stone wall made of grey, rectangular blocks. A blue cable runs horizontally across the lower part of the wall. The wall is surrounded by dry, brown leaves. The text 'zotero' is overlaid on the top half of the image, with the 'z' in red and the rest in black.




zotero













The Foundation

Quick View

Title	Creator	Date
>  Identification of peer effects through social networks	Bramoullé et al.	May 1, 2009
>  Chapter 54 - Interactions-Based Models	Brock and Durl...	January 1, 2001
>  Identification of Endogenous Social Effects: The Reflect...	Manski	July 1, 1993



>  Identification of peer effects through social networks	Bramoullé
>  Chapter 54 - Interactions-Based Models	Brock and Durl...
>  Identification of Endogenous Social Effects: The Reflect...	Manski

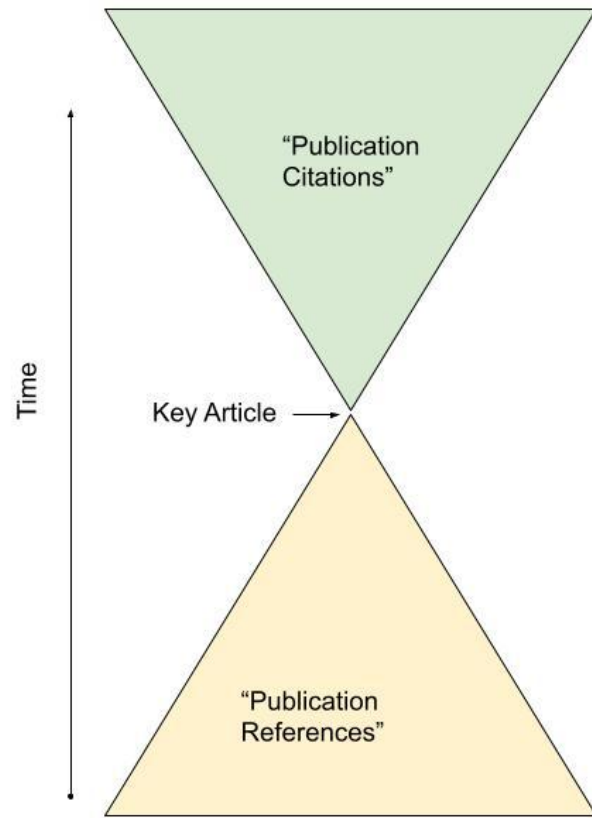
-  View PDF
-  View Online
-  View Snapshot
-  Show File
-  Find Available PDFs
-  Remove Items from Collection...
-  Move Items to Trash...
-  Merge Items...
-  **Export Items...**
-  Create Bibliography from Items...
-  Generate Report from Items...
-  Manage DOIs >
- View scite report
- Attach New File
- Manage Attachments >

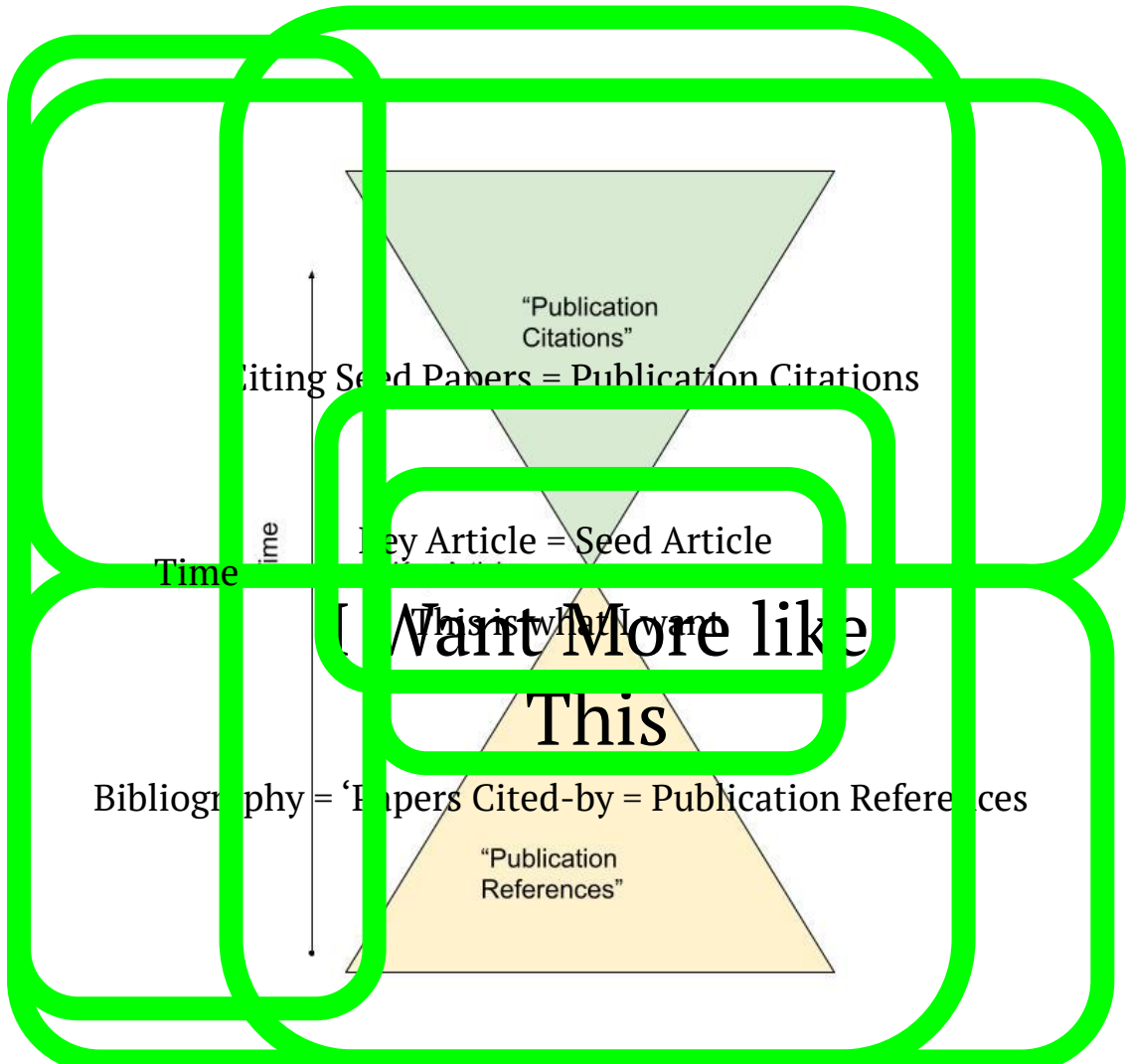
“This is what I want.

I want more like it”

Finding, not math.

- 3D Citation Mining
- One additional tool, not a replacement for the search
- Requires a mental model of research process
- Maps are a visualization of what you've already found and their interconnections, not a keyword search
- Zotero is the base.





"Publication Citations"

Citing Seed Papers = Publication Citations

Key Article = Seed Article

Time

This is what I want
Want More like This

This

Bibliography = Papers Cited-by = Publication References

"Publication References"

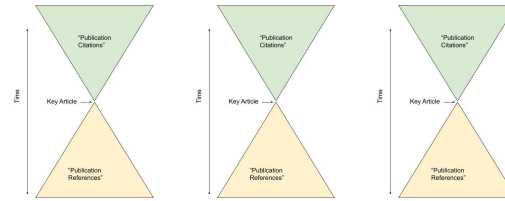
Color Code

Citation Gecko

VosViewer & Dimensions

Three Key Articles

An economist PhD candidate defined the key articles in the field



Manski, C. F. (1993). Identification of Endogenous Social Effects: The Reflection Problem. *The Review of Economic Studies*, 60(3),

531. <https://doi.org/10.2307/2298123>

Brock, W. A., & Durlauf, S. N. (2001). Interactions-Based Models. In *Handbook of Econometrics* (Vol. 5, pp. 3297–3380). Elsevier.

[https://doi.org/10.1016/S1573-4412\(01\)05007-3](https://doi.org/10.1016/S1573-4412(01)05007-3)

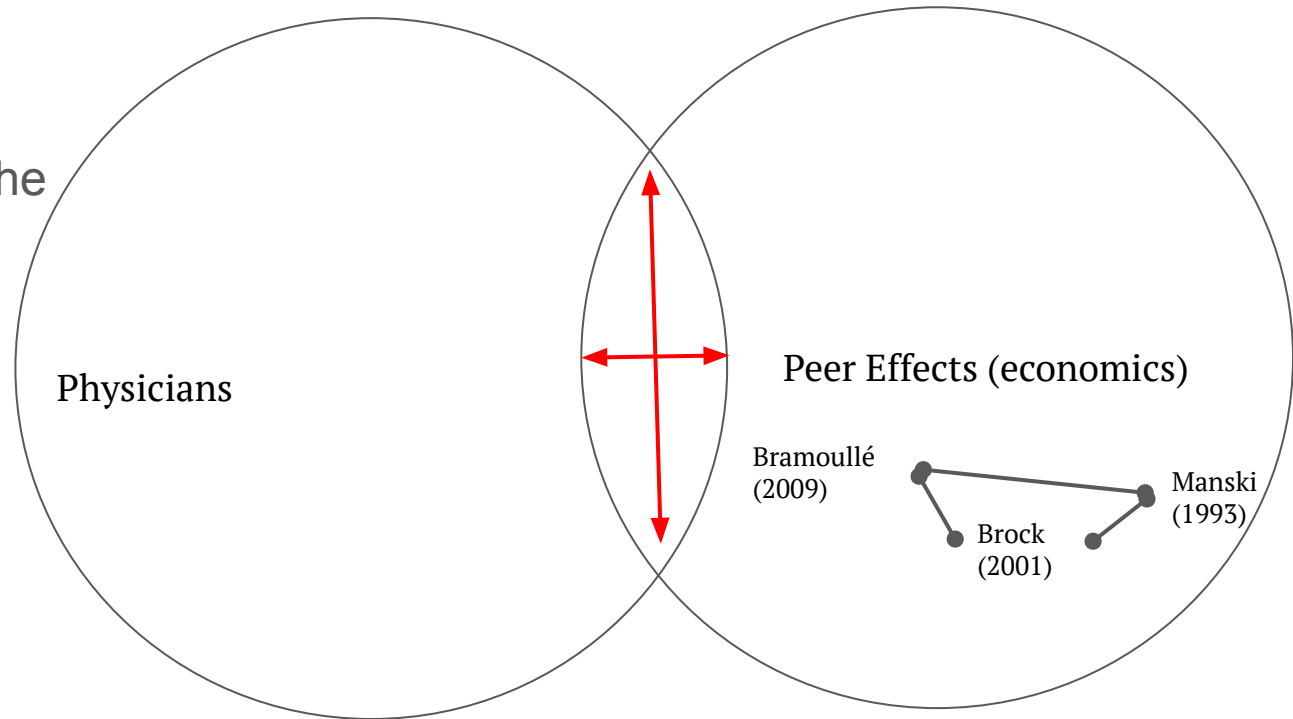
Bramoullé, Y., Djebbari, H., & Fortin, B. (2009). Identification of peer effects through social networks. *Journal of Econometrics*, 150(1),

41–55. <https://doi.org/10.1016/J.JECONOM.2008.12.021>




What don't I know?

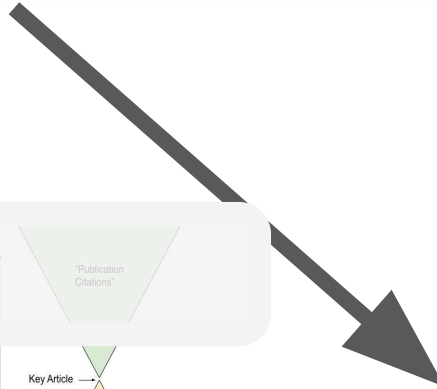
The broad landscape of how Manski (1993), Brock (2001) and Bramoullé (2009) are used by scholars studying **Physicians**.




I don't know how to identify the scope of what I don't know.


















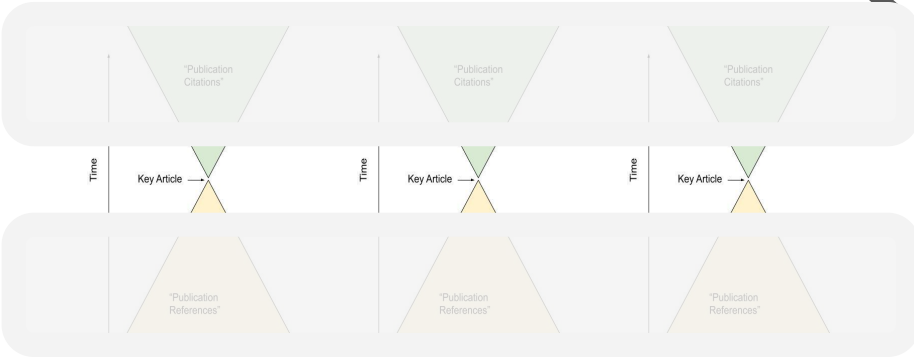
Quick View

Title	Creator	Date
>  Identification of peer effects through social networks	Bramoullé et al.	May 1, 2009
>  Chapter 54 - Interactions-Based Models	Brock and Durl...	January 1, 2001
>  Identification of Endogenous Social Effects: The Reflect...	Manski	July 1, 1993



>  Identification of peer effects through social networks	Bramoullé et al.
>  Chapter 54 - Interactions-Based Models	Brock and Durl...
>  Identification of Endogenous Social Effects: The Reflect...	Manski

-  View PDF
-  View Online
-  View Snapshot
-  Show File
-  Find Available PDFs
-  Remove Items from Collection...
-  Move Items to Trash...
-  Merge Items...
-  **Export Items...**
-  Create Bibliography from Items...
-  Generate Report from Items...
-  Manage DOIs >
-  View scite report
-  Attach New File
-  Manage Attachments >



Citation Gecko

Export... ✕

Format: **BibTeX** ▾

Translator Options

- Export Notes
- Export Files
- Use Journal Abbreviation

Character Encoding:

Unicode (UTF-8) ▾

OK **Cancel**

Welcome to Gecko

Gecko is here to help you find the most relevant papers to your research and give you a more complete sense of the research landscape.

Start from a small set of 'seed papers' that define an area you are interested. Gecko will search the citation network for connected papers allowing you to quickly identify important papers you may have missed.

Start discovering papers

[show me an example!](#)

Add Seed Papers

Add seed papers that define your area of interest and Gecko will find you connected papers. We recommended starting with 5 or 6.

- Import from Bibtex
- Search for Papers
- Import from Zotero
- Import from Mendeley

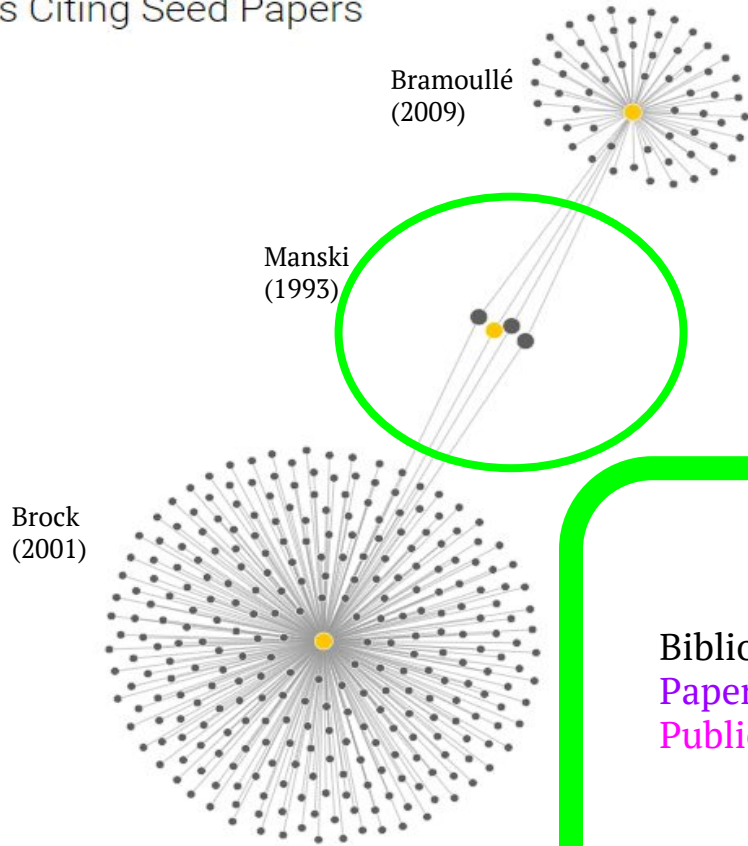
Open

← → ▾ ↑ **↓** > This PC > Downloads

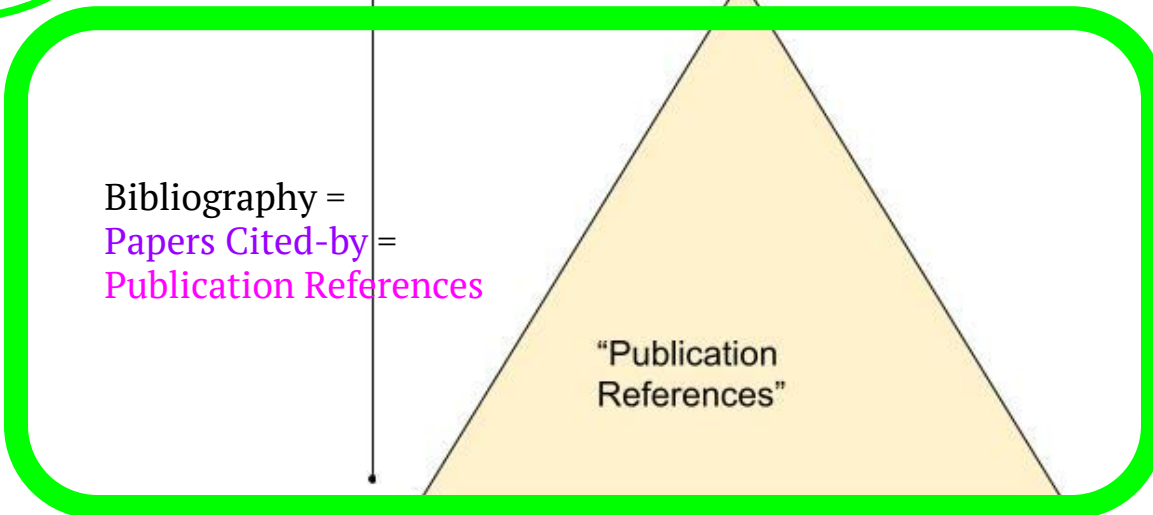
Organize ▾ New folder

Name	Date modified	Type
Today (1)		
BRIC2022.bib	24/02/2022 10:41 AM	BibTeX Document

- Seed Papers
- Papers Cited-By Seed Papers
- Papers Citing Seed Papers

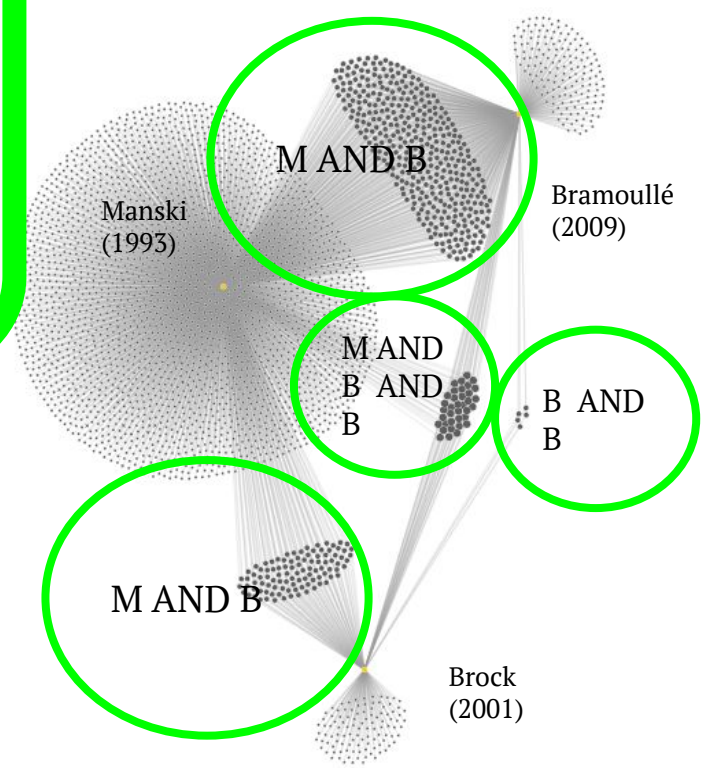
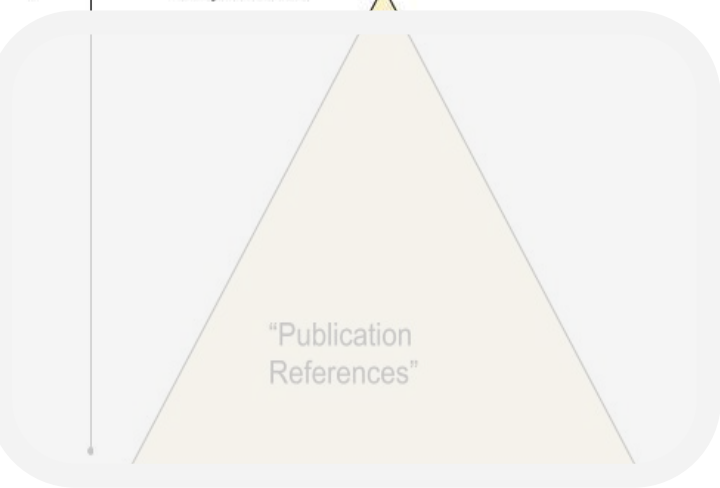
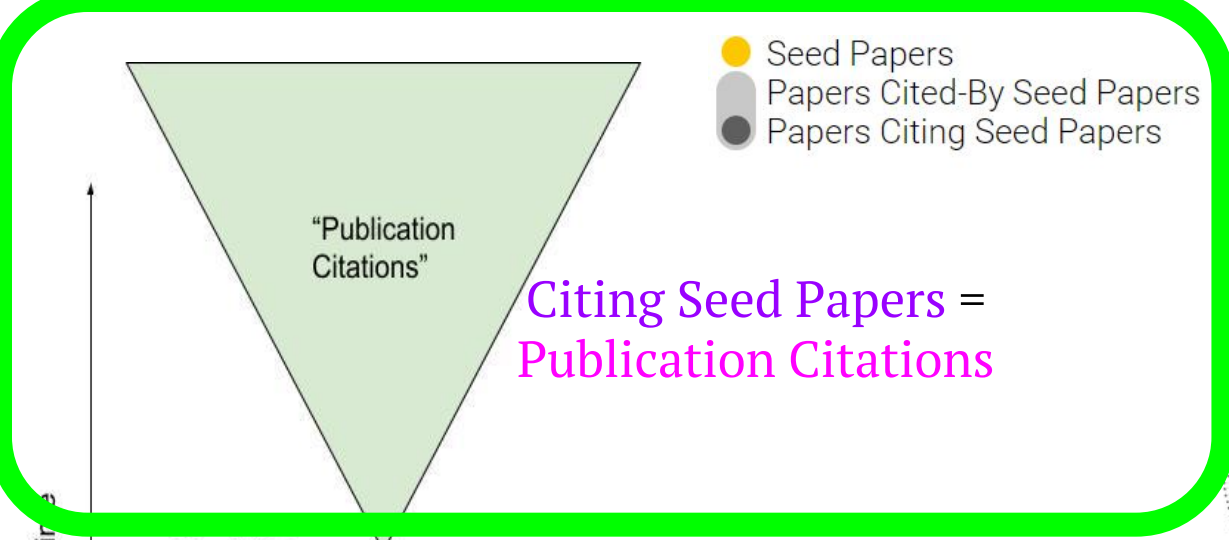


Key Article →



Bibliography =
Papers Cited-by =
Publication References

"Publication
References"



Lessons

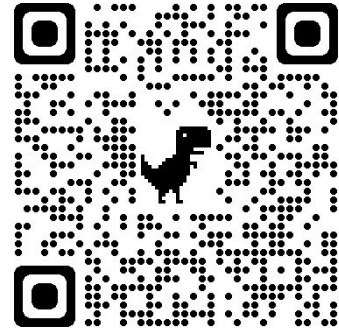
- Highly interconnected
- **Not primarily about physicians**
- Reached the limit of what citation gecko is capable of telling me
- There is missing data in the bibliography / cited-by / publication references

Tools Used



Williams, B. (2020). Dimensions & VOSViewer Bibliometrics in the Reference Interview. *The Code4Lib*

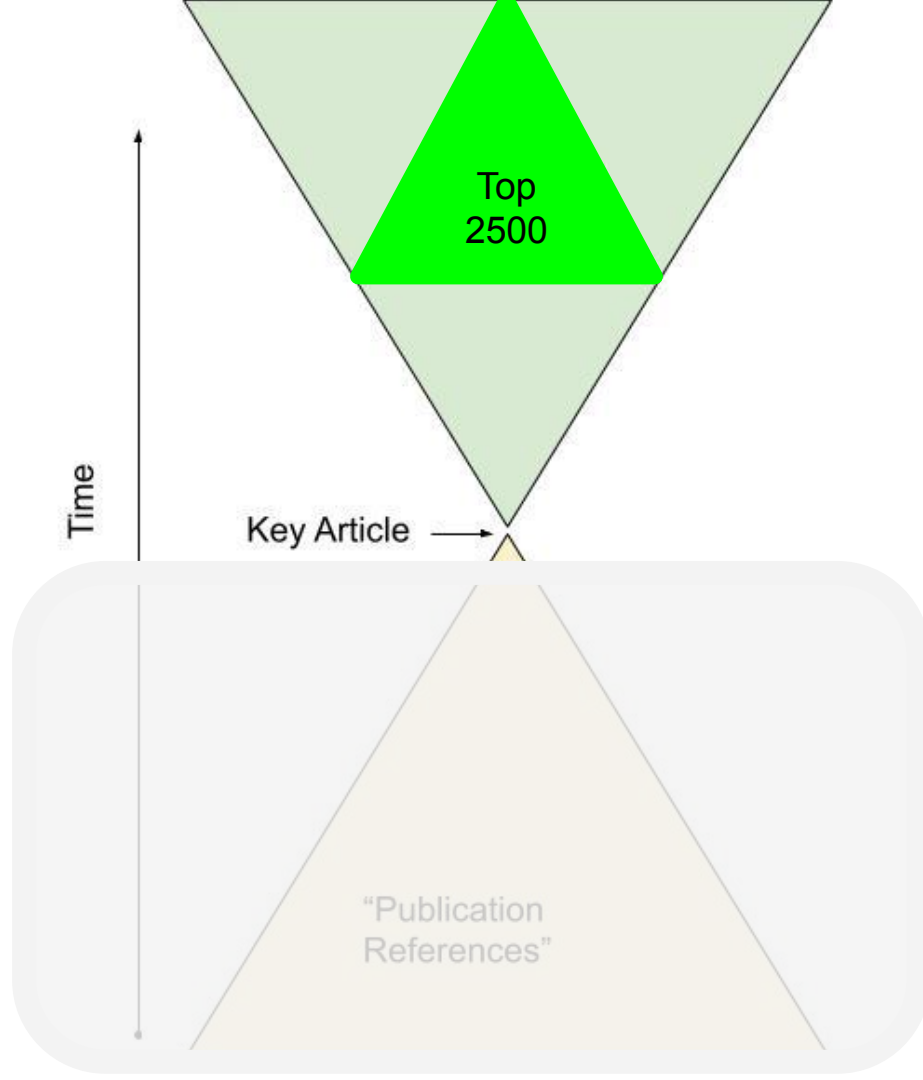
Journal, 47. <https://journal.code4lib.org/articles/14964>



Methods 1

Export all citations to Manski (1993), Brock (2001) and Bramoullé (2009) found in Dimensions and map how authors

1. Cite Manski, Brock OR Bramoullé
2. Cite each other
3. Top 2500 papers by citation count



Methods 1

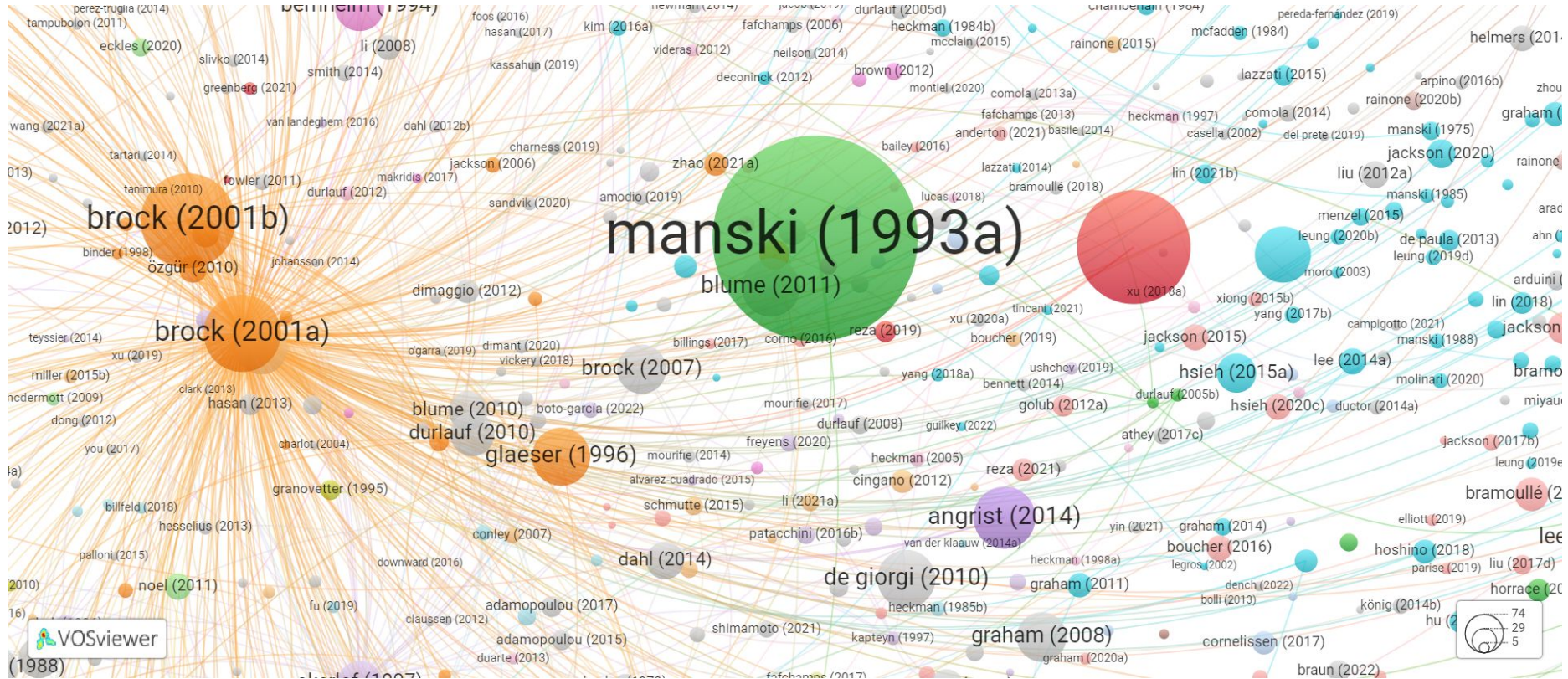
Export all citations to Manski (1993), Brock (2001) and Bramoullé (2009) found in Dimensions and map how authors

1. Cite Manski, Brock OR Bramoullé
2. Cite each other
3. Top 2500 papers by citation count within the data set

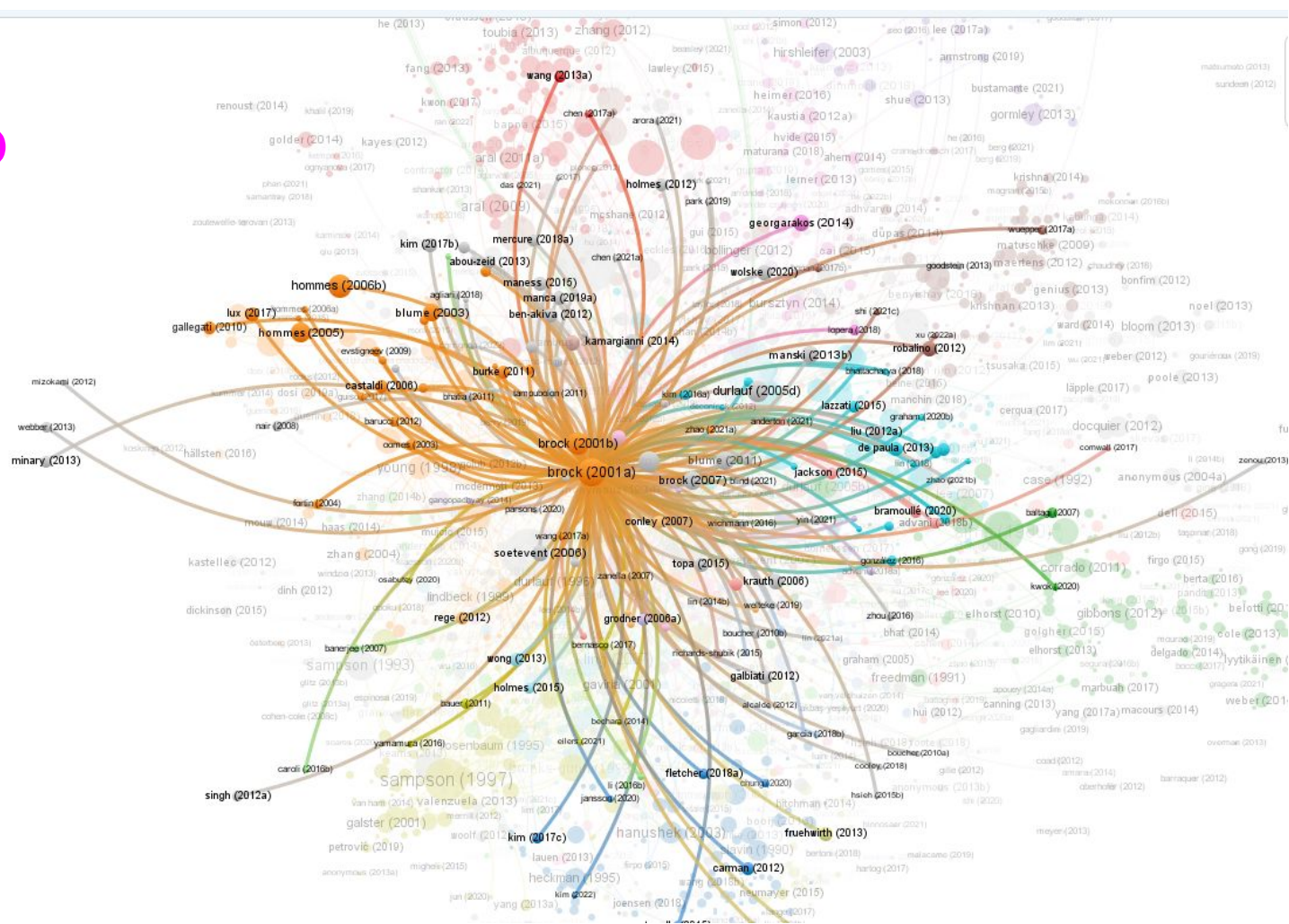
https://app.vosviewer.com/?json=https%3A%2F%2Fdrive.google.com%2Fuc%3Fid%3D14-2Kq-v8GVZymNWhtfXRVNQpNkg_rGlkt



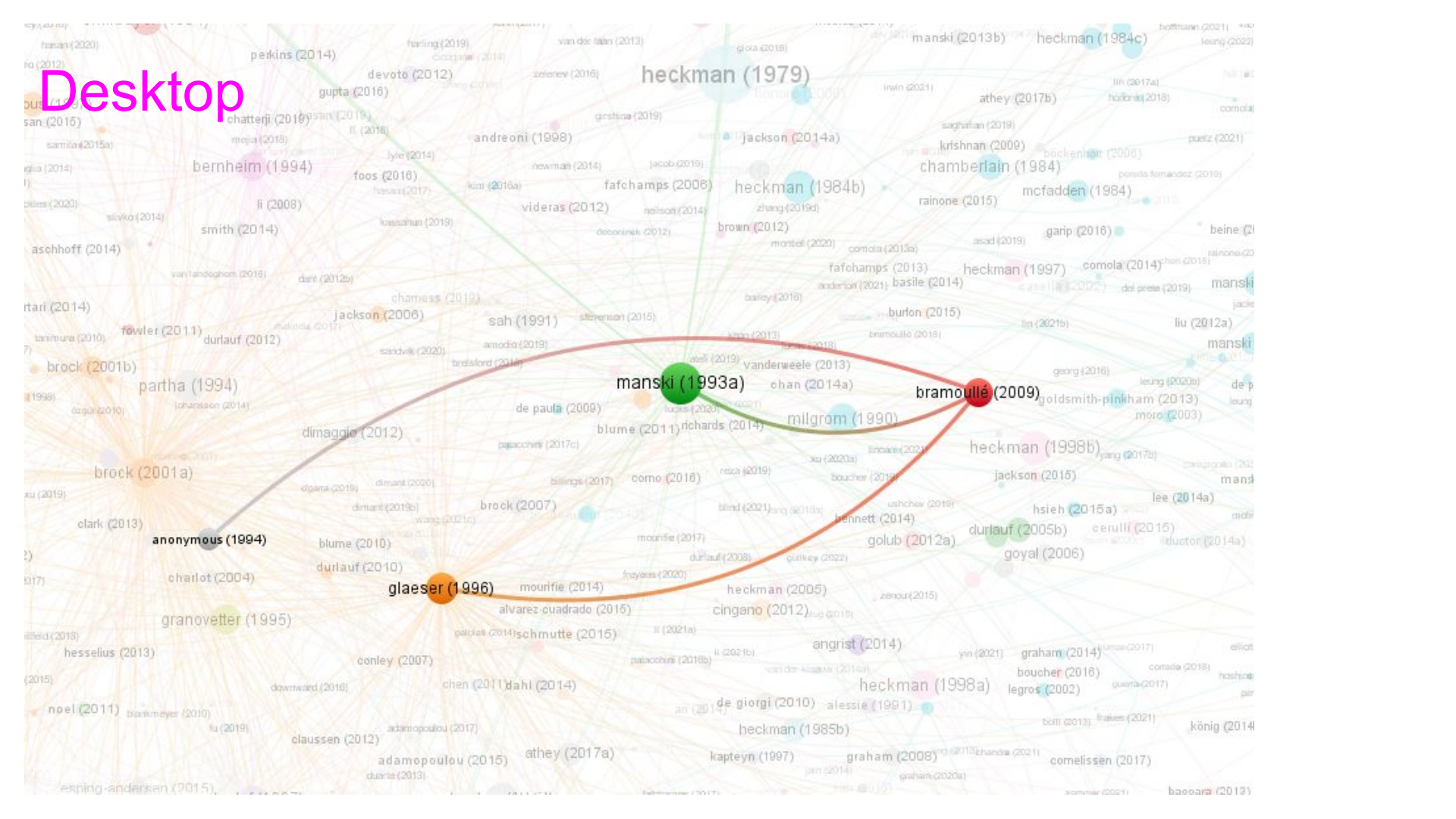
Online



Desktop



Desktop



What did I establish?

Manski is **really** influential in this area of scholarship

Brock & Bramoullé build on Manski and are influential in this area of scholarship

But there's **not a lot about physicians**



Authors: sampson, robert j.; morenoff, jeffrey d.; gannon-rowley, thomas

Title: assessing "neighborhood effects": social processes and new directions in research

Source: annual review of sociology, 28(1), 443-478

Year: 2002

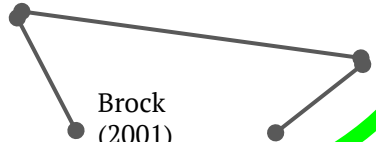
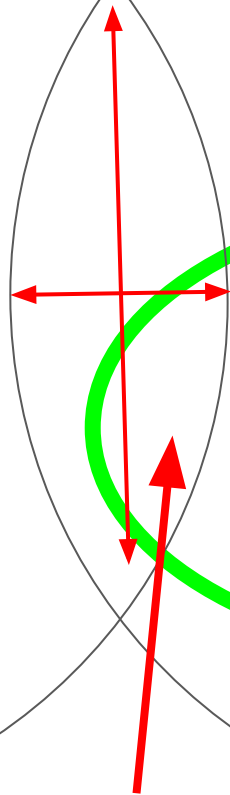
Physicians

Peer Effects (economics)

Bramoullé
(2009)

Brock
(2001)

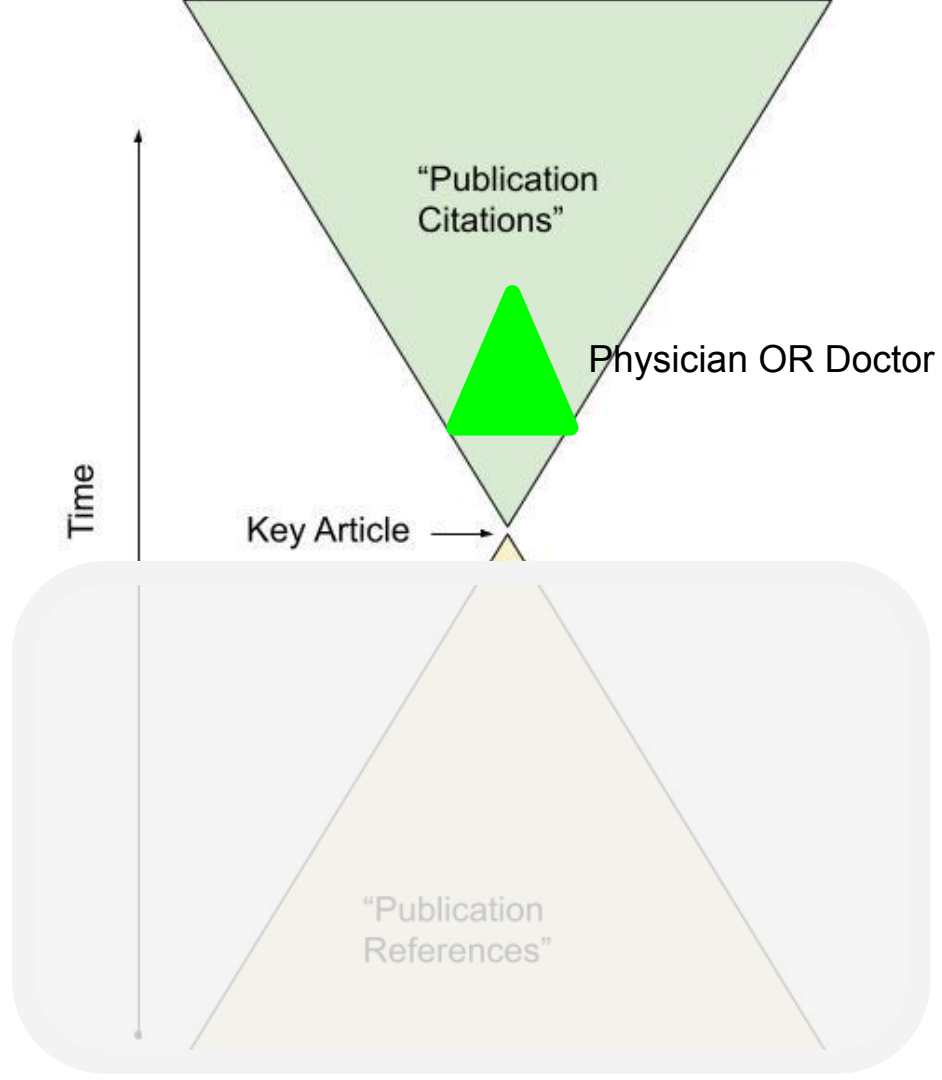
Manski
(1993)



Methods 2

Export all citations to Manski (1993), Brock (2001) and Bramoullé (2009) searched against for the word '**Physician OR Doctor**' in **title and abstract** in Dimensions and map how authors

1. Cite Manski, Brock OR Bramoullé
2. Cite each other
3. 1 citation
4. 1000 by citation count



Methods 2

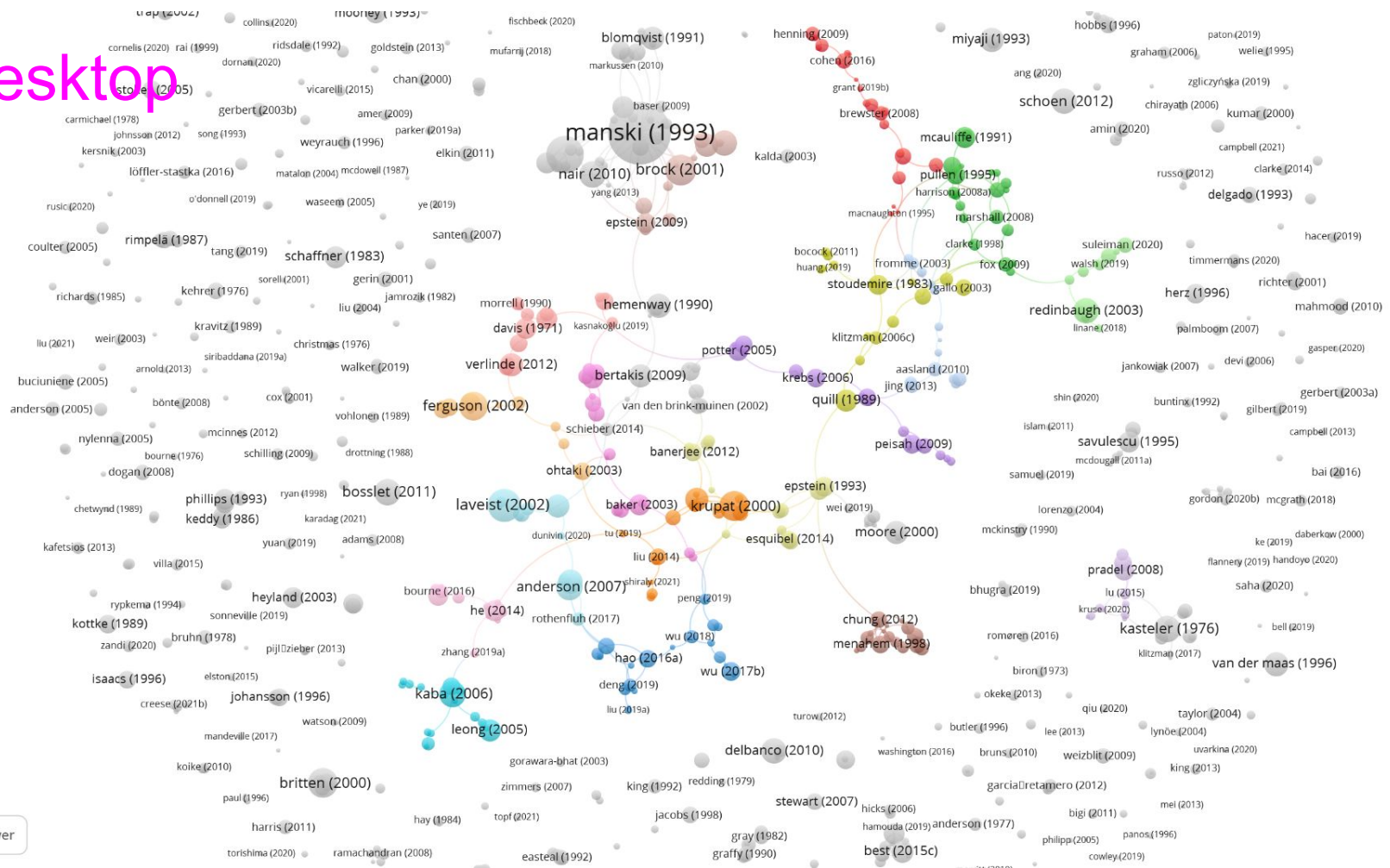
Export all citations to Manski (1993), Brock (2001) and Bramoullé (2009) searched against for the word '**Physician OR Doctor**' in **title and abstract** in Dimensions and map how authors

1. Cite Manski, Brock OR Bramoullé
2. Cite each other
3. 1 citation
4. 1000 most relevant

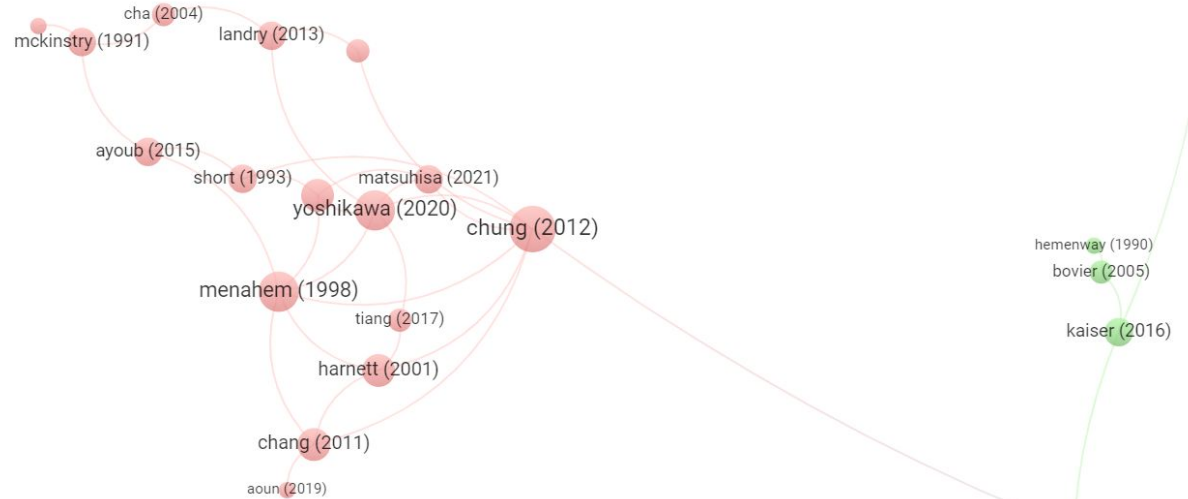
<https://app.vosviewer.com/?json=https%3A%2F%2Fdrive.google.com%2Fuc%3Fid%3D1Co4RmUhMwCERBDP4A0kKhuQLFCN34UBv>



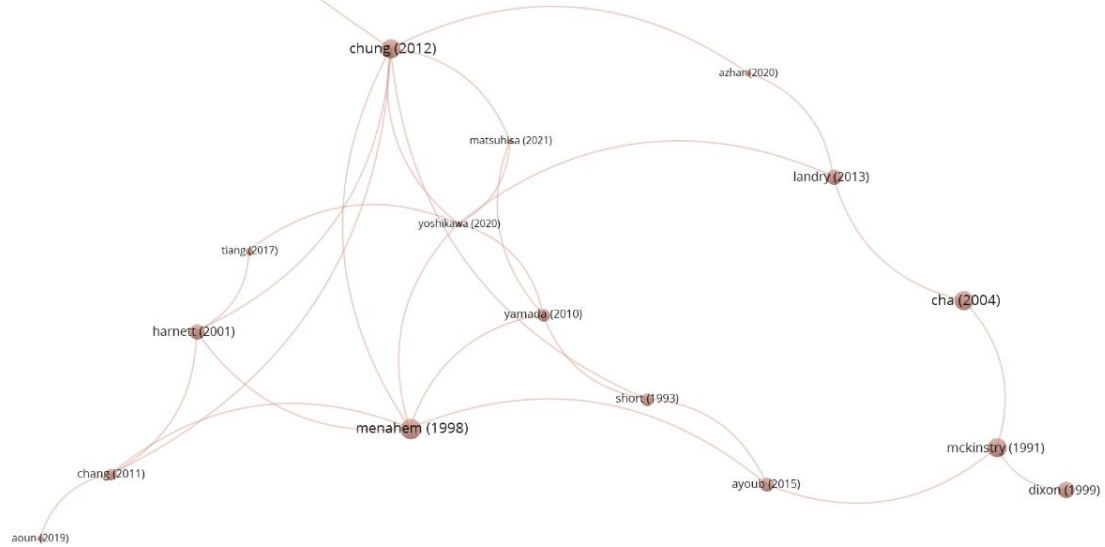
Desktop



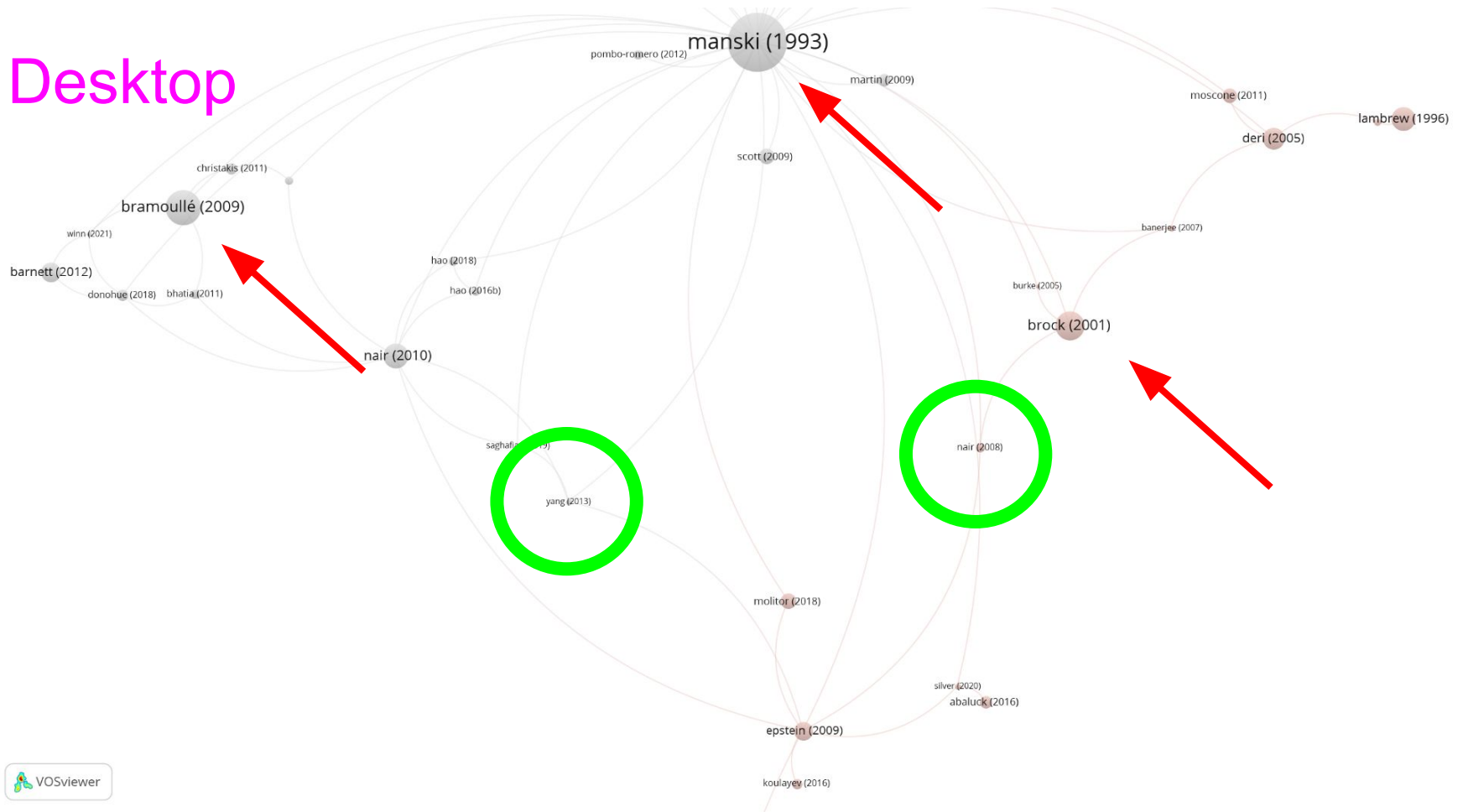
Online



Desktop



Desktop



Did not know about the cluster around

Nair, H. S., Manchanda, P., & Bhatia, T. (2010). Asymmetric Social Interactions in Physician Prescription Behavior: The Role of Opinion Leaders. *Journal of Marketing Research*, 47(5), 883–895. <https://doi.org/10.1509/jmkr.47.5.883>


YANG, M., LIEN, H., & CHOU, S. (2014). IS THERE A PHYSICIAN PEER EFFECT? EVIDENCE FROM NEW DRUG PRESCRIPTIONS. *Economic Inquiry*, 52(1), 116–137. <https://doi.org/10.1111/ecin.12022>


Publication - Preprint


Asymmetric Social Interactions in Physician Prescription Behavior: The Role of Opinion Leaders


SSRN Electronic Journal - 2008


<https://doi.org/10.2139/ssrn.937021>


Auth:  Follow this page


Harik  Highlight This: finds and marks words


Pune  LastPass


Tulik:  Link Grabber


 Reverse image search

 Save to Keep

 Save to Zotero

 Wayback Machine

 View page source Ctrl+U

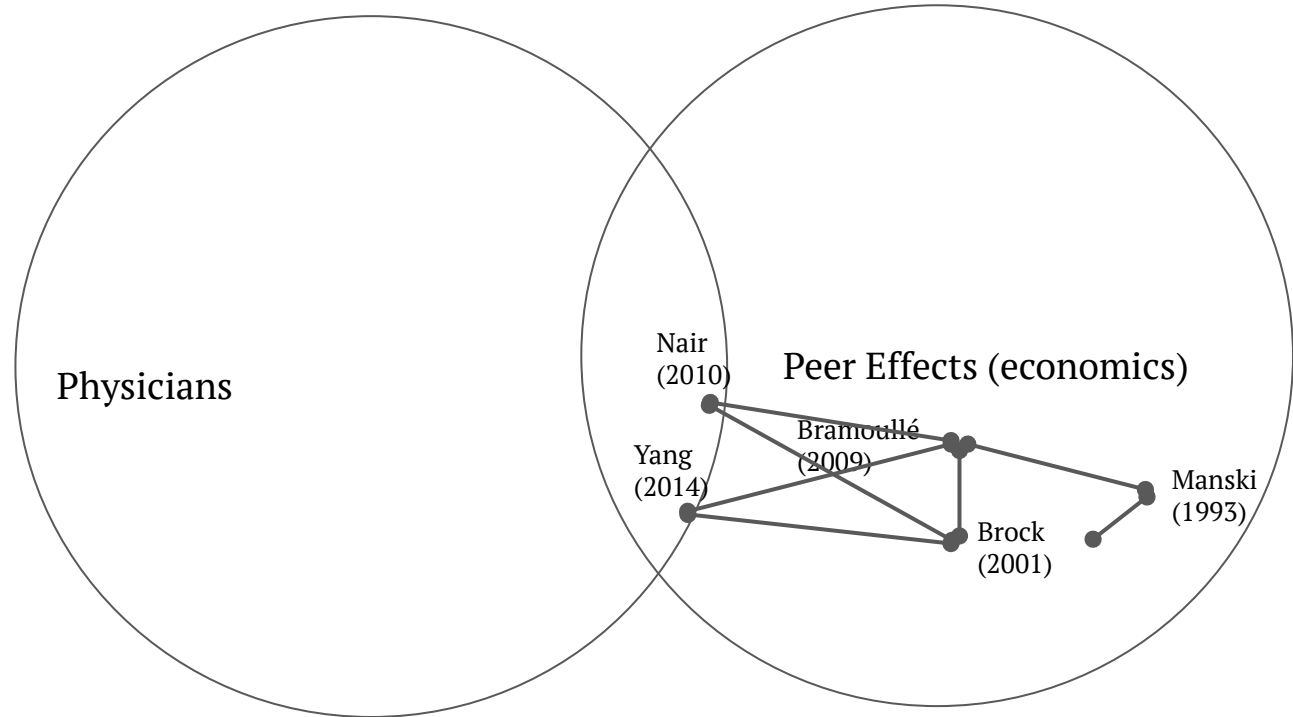
 Inspect

Sorted by:

- Save to Zotero (Dimensions)
- Save to Zotero (Embedded Metadata)
- Save to Zotero (DOI)
- Save to Zotero (Web Page with Snapshot)
- Save to Zotero (Web Page without Snapshot)

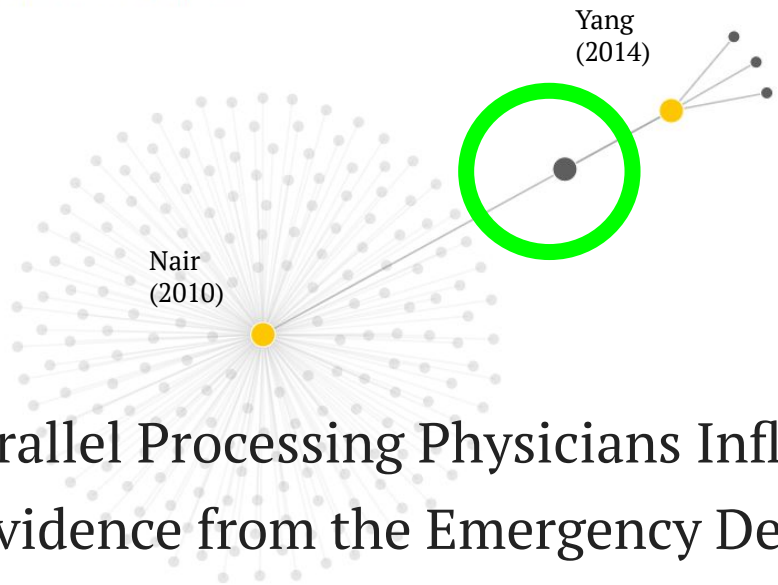
What do I have now

I have some sense of what I do know



Quick View - Citation Gecko

- Seed Papers
- Papers Cited-By Seed Papers
- Papers Citing Seed Papers



Do Independent and Parallel Processing Physicians Influence Each Other's Performance? Evidence from the Emergency Department

Saghafian 2021

Save Image



Computers are dumb, People are smart

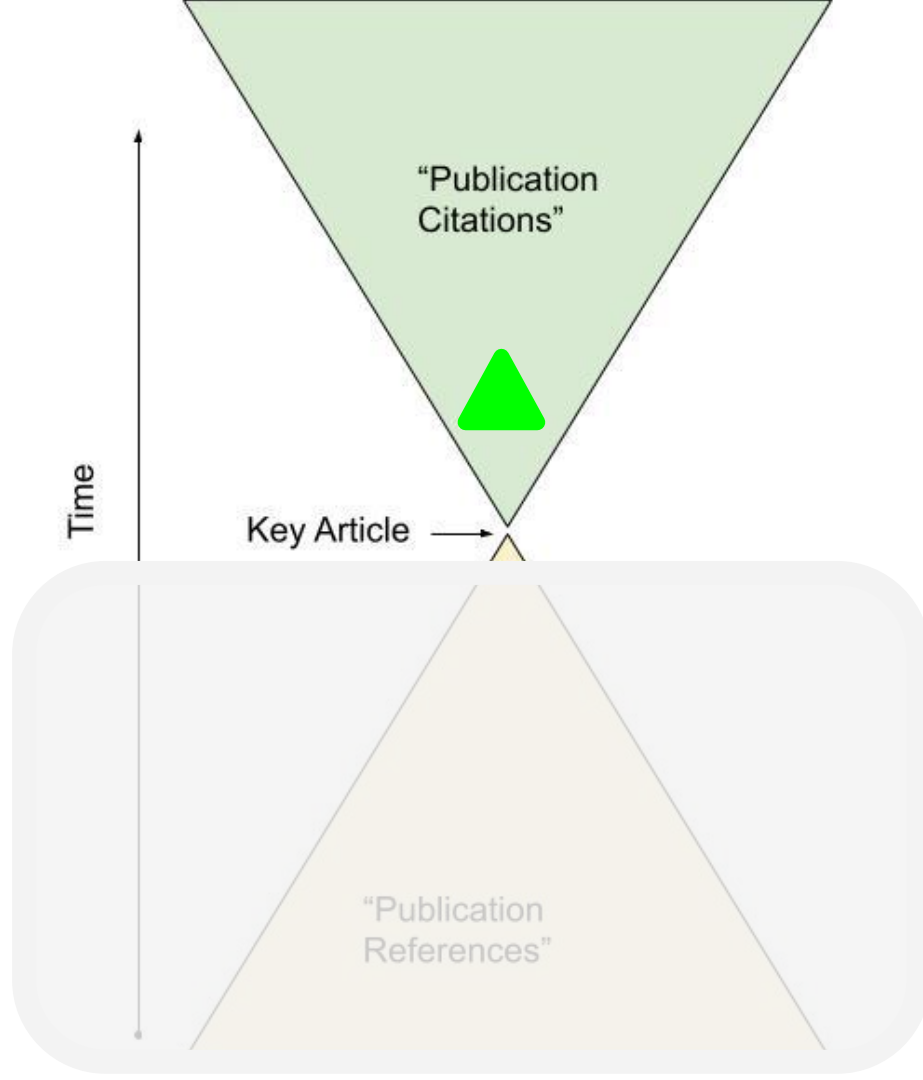
A database doesn't always see the connection between 'physician' and 'doctor'

A database *rarely* sees the connection between physician and nephrologist unless it's explicitly in the code (ie PubMed)

Methods 3

Export all citations to Manski (1993), Brock (2001) and Bramoullé (2009) searched against for a complex string of synonyms* for 'physician' and specialties in Title and Abstract in Dimensions and map how authors

1. Cite Manski, Brock OR Bramoullé
2. Cite each other
3. 1 Citation, ONLY ~300 paper largest cluster



Methods 3

Export all citations to Manski (1993), Brock (2001) and Bramoullé (2009) searched against for a complex string of synonyms* for 'physician' and specialties in Title and Abstract in Dimensions and map how authors

1. Cite Manski, Brock OR Bramoullé
2. Cite each other
3. 1 Citation, ONLY ~300 paper largest cluster

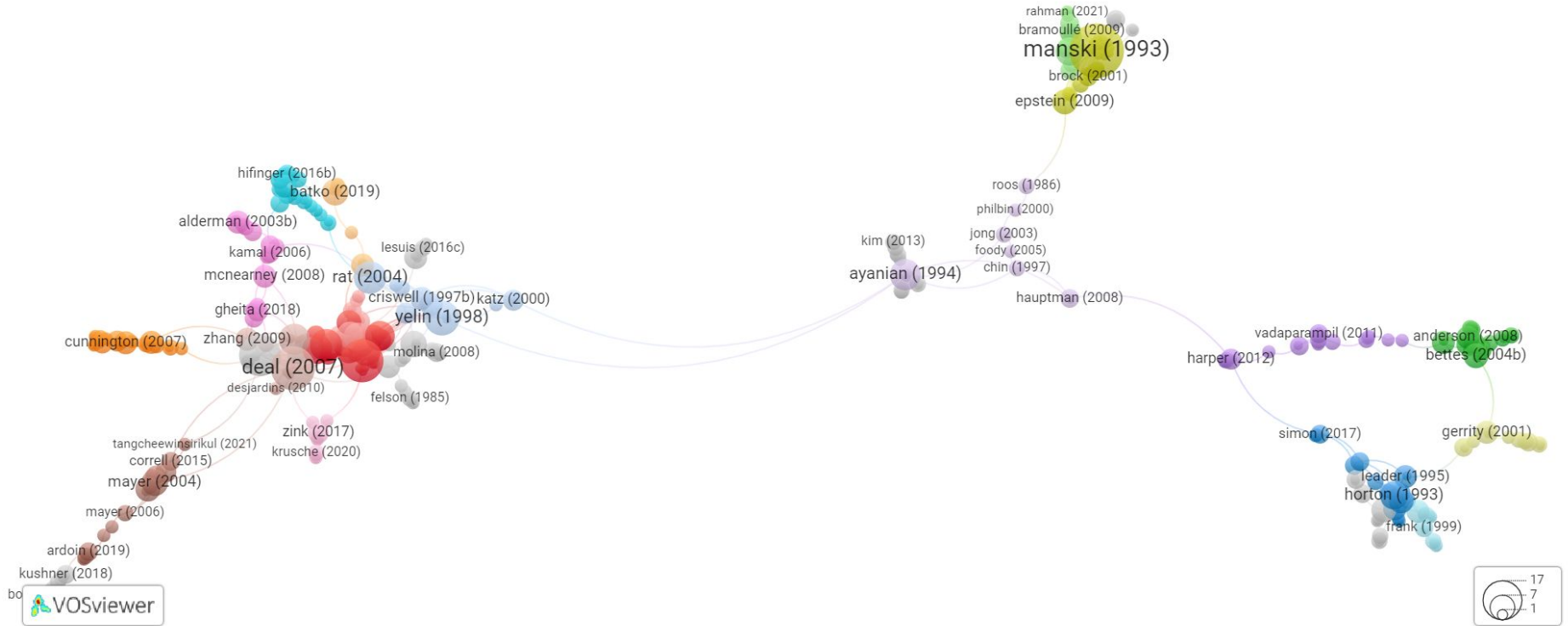
<https://app.vosviewer.com/?json=https%3A%2F%2Fdrive.google.com%2Fuc%3Fid%3D1og88dPbUoInOu5Y8RrmBSQJ2jqmJIXb>

[surgeon OR doctor OR physician OR clinician OR anesthesiologists OR anesthetist OR psychiatrist OR oncologist OR internist OR geriatrician OR cardiologist OR dermatologist OR Rheumatologist OR nephrologist OR neurologist OR radiologist OR respirologist OR rheumatologist OR paediatrician OR Endocrinologist OR pathologist OR neurosurgeon OR Gynecologist OR Obstetrician OR Ophthalmologist OR urologist OR Neuropathologist]

Thank you to Karen Lee for developing and maintaining this list

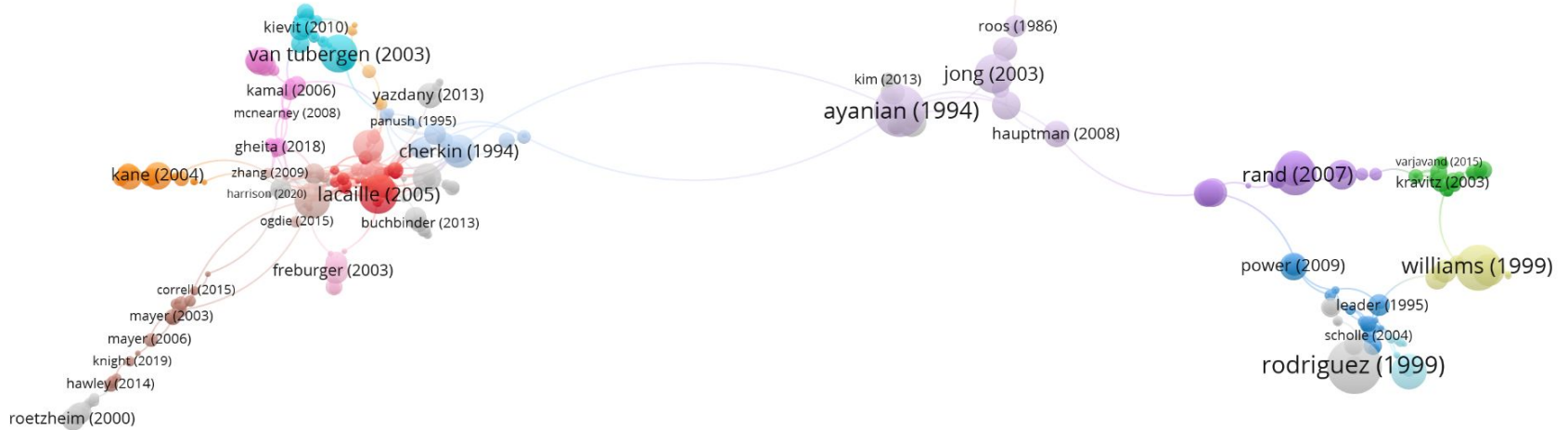


Online

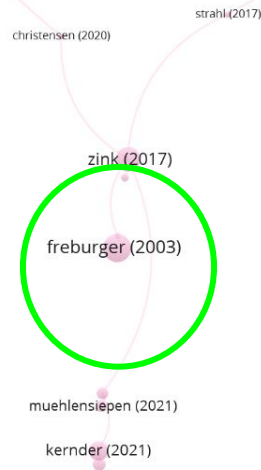


Desktop

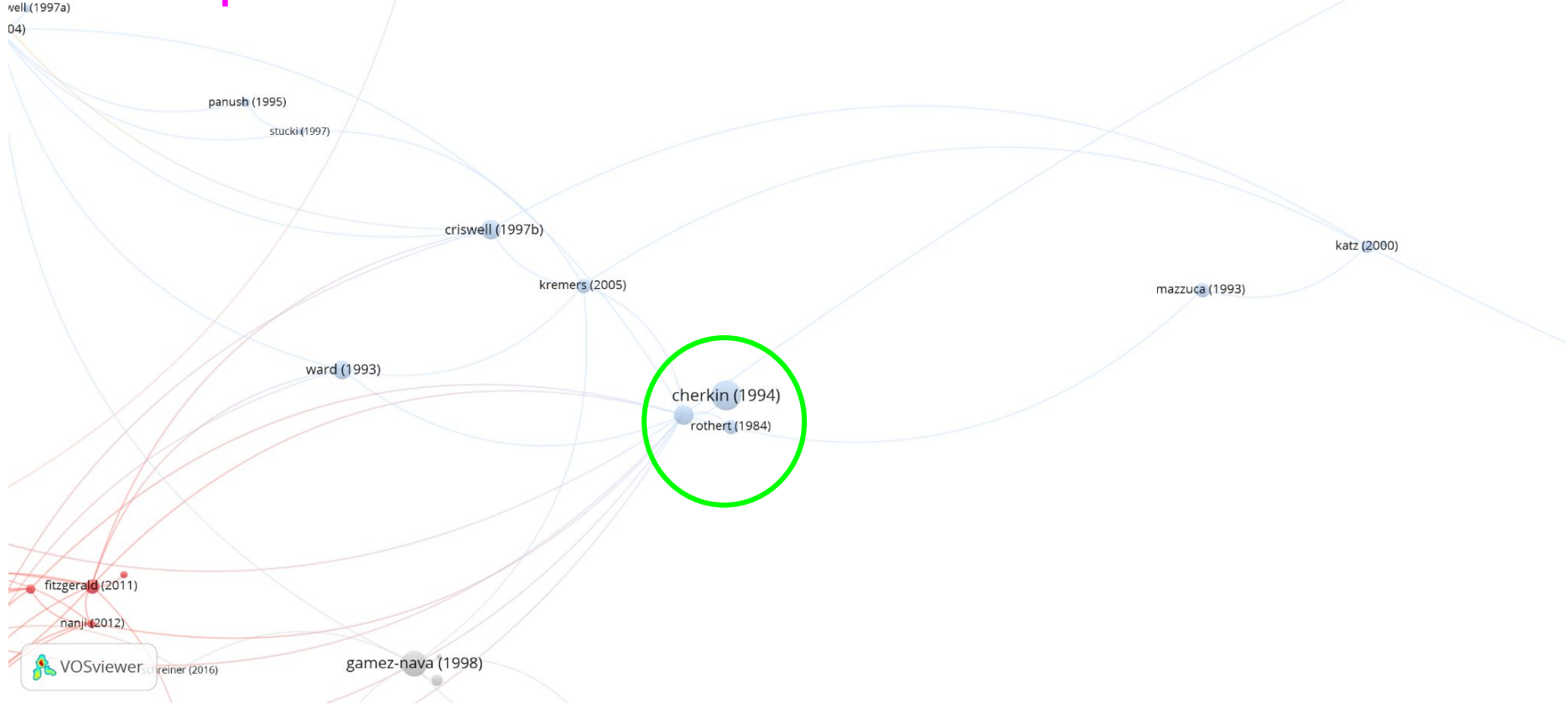
manski (1993)



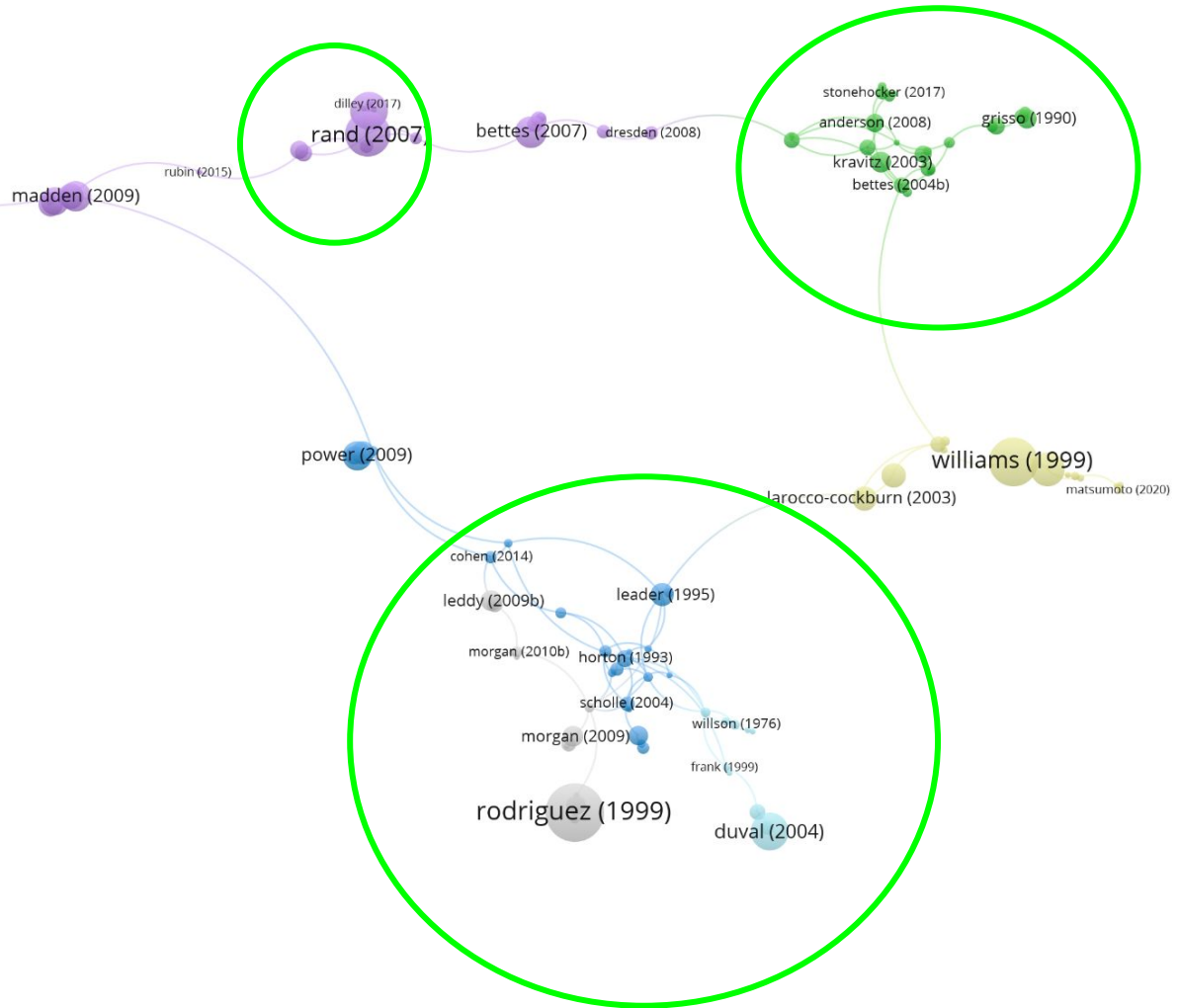
Peer effects in prescriptions in Rheumatology



Desktop



Desktop



How did I know when to stop searching?

















































Lots of complicated connections, a couple of unique clusters.

Manski, Bramoullé and Brock are central this area.

Repeat articles

Using Highlight This to identify articles already saved

Outcome

- ▼  Outside Use
 -  Draft
 -  For Prima
 - ▼  Methods
 -  Estima
 -  Overvie
 - ▼  Physician
 -  Brett -
 -  Kate S
 - ▼  Primary C
 - >  Contin
 -  Evaluat
 -  Template
- ▼  Peer Effects - General
 - ▼  1. From Previous Search
 -  Boris - Social Netw
 - >  Jasmin
 - >  Kate - Network_ana
 - >  Misc
 - ▼  Shervan - Social Net
 -  endocrinologists
 -  Peer Effects
 -  Peer Effects - Pap
 -  Peer Effects - Pha
 - ▼  2. Methodology
 - ▼  1. Key Background F
 -  I. Pre-Lee(2007) F
 -  II. Network Identi
 -  III. Handbook Ch
 -  IV. Technically De
 -  V. Non-Technical
- ▼  2. Identification from Network Structure
 -  I. Methods
 -  II. Applications
- ▼  3. Other Identification Strategies
 -  I. Panel Data
 - >  II Endogenous Network Models
 -  4. Theoretical Models
- ▼  5. Estimation
 -  I. Basic Spatial Correlation Models
 - >  III Other models
 -  IV. Code and packages
 - >  6. Possibly Important Papers
- ▼  3. Physician Peer Effects
 - >  Brett
 -  Jasmin
 - >  Kate S
 -  Manski 1993 Cites

Citation Gecko Limits

Not great on accuracy before about 2002-2003. None of Manski's bibliography of papers are in the 1993 paper's metadata, only citations to the Manski 1993 paper

US/Canada/Western Europe

Less accurate

Dimensions Limits

Not great on accuracy before about 2002-2003. None of Manski's bibliography of papers are in the 1993 paper's metadata, only citations to the Manski 1993 paper

Coverage is only Sciences (good) and Social Sciences (average)

US/Canada/Europe/China/Japan

VOS Viewer Limits

In active development

Moving beyond default color & layout is highly technical

Only works with Web of Science and Dimensions data for citation mapping.

Co-author, co-citation and other text-mining functions only work well on massive data sets

Garbage In, Garbage Out

Key Tools For The Search Process

- **Zotero** - Centralize collection and export results in BibTex & CSV
 - Scite Plugin
 - DOI Manager
- **Citation Gecko** - Quick Mapping (less accurate)
 - Zotero export in BibTex format
- **Dimensions** - Free access to mapping data with a verified university email address
- **VOSViewer** - Accurate Map (More accurate, more complicated)
- **Custom Formatting Tools** to speed up search strategy
 - Google Sheets
- **Chrome Plugins**
 - LinkGrabber - grabs direct links to sites for later processing
 - HighlightThis - Lists of DOIs to spot key articles
 - OpenMultipleURLs - Does what it says on the label
 - Unpaywall - Another way to grab PDFs
 - Scite

Tools & techniques detailed here



Williams, B. (2020). Dimensions & VOSViewer Bibliometrics in the Reference Interview. *The Code4Lib Journal*, 47.

<https://journal.code4lib.org/articles/14964>

The VOSviewer software provides easy access to bibliometric mapping using data from Dimensions, Scopus and Web of Science. The properly formatted and structured citation data, and the ease in which it can be exported open up new avenues for use during citation searches and reference interviews. This paper details specific techniques for using advanced searches in Dimensions, exporting the citation data, and drawing insights from the maps produced in VOS Viewer. These search techniques and data export practices are fast and accurate enough to build into reference interviews for graduate students, faculty, and post-PhD researchers. The search results derived from them are accurate and allow a more comprehensive view of citation networks embedded in ordinary complex boolean searches.

Thank you.

@BrettLWilliams on Twitter

brett.williams@oma.org

oma.org

