

A quantitative sociology of academic work in an era of hypercompetition and rankings

Research plans for visiting CWTS - Leiden University

Ali

University of Milan - University of Brescia

2/2/2018

Outline

- ▶ Introducing myself, GECS, my coauthors
- ▶ Introduction of previous studies
- ▶ My plans during visiting CWTS

A screenshot of a web browser window showing a GitHub page for "akbaritabar". The URL in the address bar is "akbaritabar.github.io". The page has a dark header with navigation links: "About Me", "CV", and "Research Projects & Ideas".

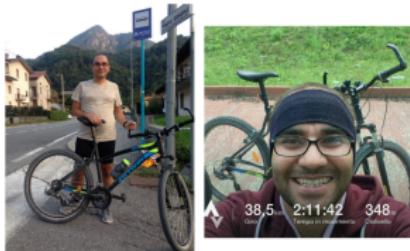
Aliakbar Akbaritabar (Ali)

Hello there!

I am Ali (the simplest version of Aliakbar Akbaritabar, believe me, I have tried other versions!). Below you find pictures of me in my happiest moments. Those moments normally involve a bike ([see my Strava](#)) and my good friends!

I like to call myself a **Social Data Scientist** (I don't know when it is going to officially become a thing, till then, it is mainly what data scientists are doing plus a sociological approach which is what I have been studying for most of my academic life).

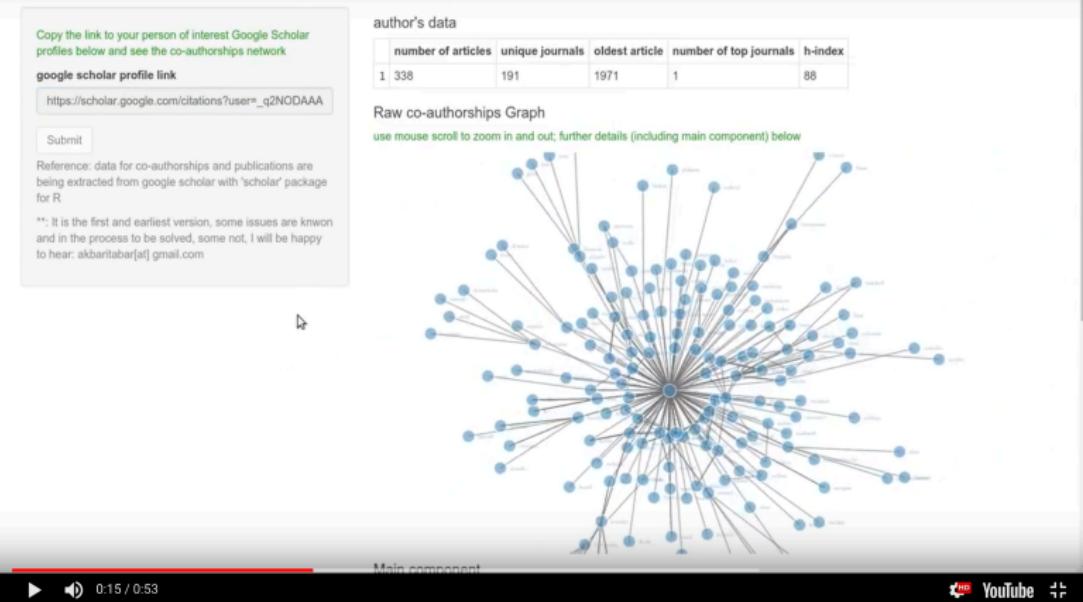
You can find a detailed **CV** of me [here](#) and introductions to *Research Projects & Ideas* I have been working on [here](#)



Find me here: akbaritabar.github.io

R & shiny application for google scholar data crawl and netowrk analysis

Who are researchers mostly co-authoring with?



Brief Shiny application to see google scholar coauthorships network
+ R package to extract paper/author network from Scopus and add numID

The screenshot shows a web browser window displaying the GECS Research Group on Experimental and Computational Sociology website. The URL in the address bar is `gecs.unibs.it`. The page features a dark header with the GECS logo and navigation links for HOME, RESEARCH PROJECTS, VISITING SCHOLARS, PUBLICATIONS, COLLEAGUES, LECTURES, and CONTACTS. Below the header is a photograph of a computer lab with multiple workstations. A blue sidebar on the left contains the word "GECS". The main content area describes the group's mission to integrate computational and experimental research to explain social and economic phenomena, mentioning its establishment in 2007 and focus on interdisciplinary research. It also notes the group's role in training and organizing events. A link to their Facebook page is provided. The bottom section, titled "Members", lists several members with their names and academic status.

GECS

GECS-Research Group on Experimental and Computational Sociology aims to integrate computational and experimental research to explain complex social and economic phenomena, such as markets, organisational behaviour and scientific collaboration. Formally established in 2007, it aims to promote innovative interdisciplinary research in economics and sociology by exploiting the advantage of modelling, computer simulation, and lab and field experiments.

GECS operates through personal collaboration, common participation in research projects and the organisation of scientific events. It is involved in training and education initiatives addressed to young scholars. It regularly also hosts external PhD students and Post-Docs for jointed research projects.

For any news, please follow [GECS on Facebook](#).

Members

GECS members are:

Allashbar Akbaritabar (University of Brescia, Italy) PhD Student
Linda Alengoz (University of Brescia, Italy) PhD Student
Juan Francisco Alvarado (University of Brescia, Italy) PhD Student
Jonnabelle Asis (University of Brescia, Italy) PhD Student

Find GECS here: gecs.unibs.it

1st paper: “The conundrum of research productivity. A study on sociologists in Italy”

- ▶ **How is the situation of our community ?**
- ▶ **Is it a matter of embeddedness?**

Find it here on Scientometrics:
<https://link.springer.com/article/10.1007/s11192-017-2606-5>

Method & Data 1/2

- ▶ **FSS** (Fractional Scientific Strength) (by Abramo, D'Angelo, and Di Costa 2011; Abramo and D'Angelo 2011); a production function by microeconomic approach. (a) resources used by scientists, e.g., salary and time, and (b) scientific outputs, e.g., publications, and c) citations

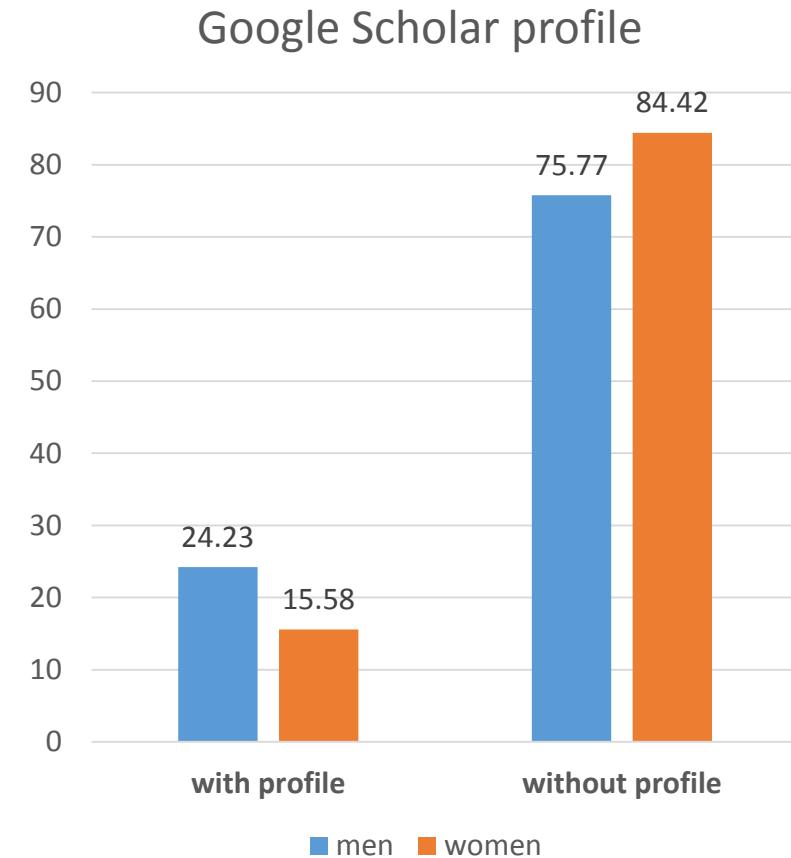
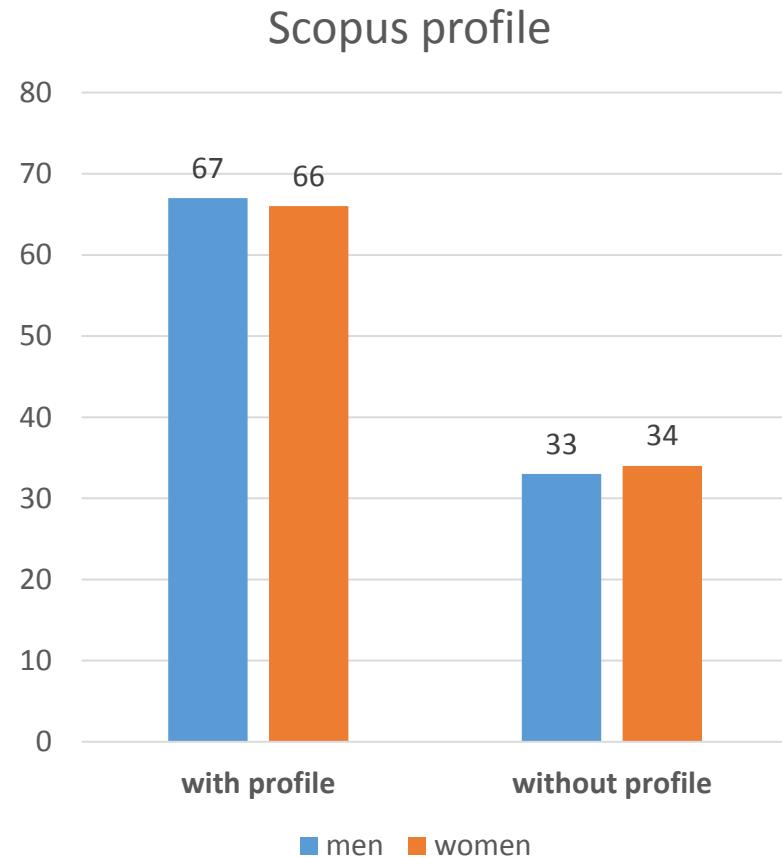
$$FSS_R = \frac{1}{t} \sum_{i=1}^N \frac{c_i}{\bar{c}} f_i$$

- ▶ t = is the time a researcher has been publishing papers, *Sep2016 – p.date*
- ▶ N is the number of publications a sociologist have;
- ▶ i each paper of this author
- ▶ c_i is the number of citations of publication i
- ▶ \bar{c} is the average number of citations each paper have received
 - ▶ compared to other papers published in the same year
 - ▶ on each sub-community (SPS07 – SPS12 in MIUR categorization)
 - ▶ all sociologists in our sample
- ▶ f_i is inverse of number of authors of this paper

Hierarchical linear modeling

- ▶ Examining the importance of institutional embeddedness
- ▶ Each scientist is nested in different clusters
- ▶ Three clustering levels:
 - ▶ department; promotion and careers are eventually decided locally
 - ▶ scientific disciplinary sector
 - ▶ university, important in Italy after the last reform of the national university system in 2010; governance for incentivising and measuring scientist productivity, e.g., by establishing rewards for research excellence and allocating internal resources on productivity indicators.
- ▶ Following (Snijders and Bosker 1999; Faraway 2005; Zuur et al. 2009), we used hierarchical linear models
 - ▶ for example, an assistant professor of political sociology (i.e., this is the scientific disciplinary sector) who was enrolled in a department of social sciences in a given university could have different intercept (starting point) and slope (growth rate) in a regression model compared to a full professor of economic sociology in the same university and department.

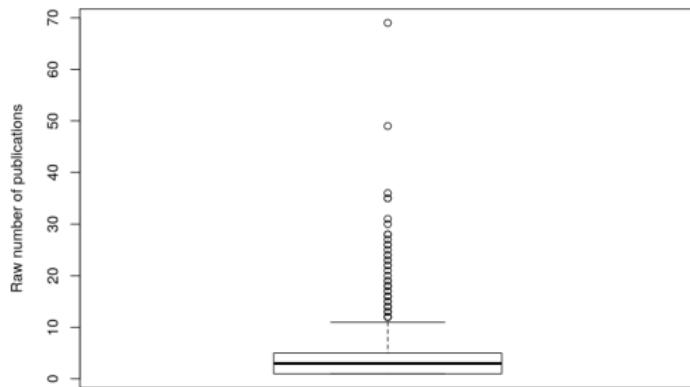
Faculty members



- Only **67 %** have Scopus profile (at least one publication in indexed journals, book or book chapter, conference proceeding, etc.) **33 %** no profile
- Scopus profile coverage of male and female sociologists are close (67% & 66%)

Results

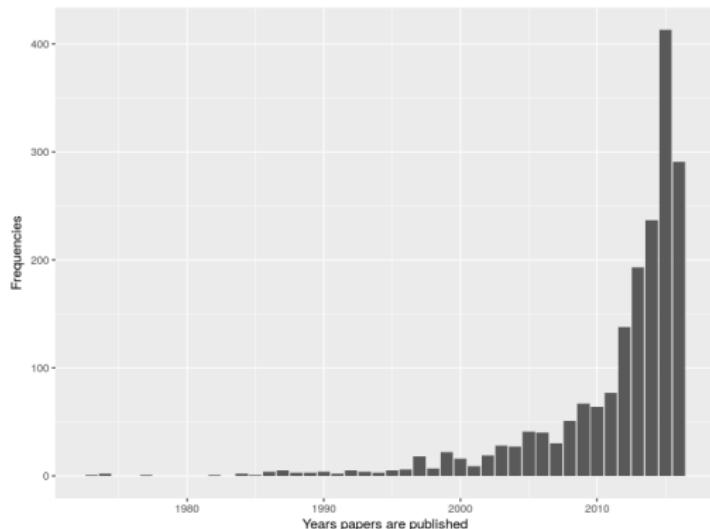
- Highly skewed distribution of publications; in line with (Nygaard 2015; Ramsden 1994; Coile 1977; Ellwein, Khachab, and Waldman 1989).



Box-plot distribution (black line is the median)

Results

- Delayed recognition of scientific contributions (e.g., Garfield 1980 as cited in Abramo and D'Angelo (2011a))
- Before 2000 without any citation!



Results

Table 1: Comparative table of Multi level regression models

	Research productivity as dependent variable	
	FSS (1)	Total Publications (2)
internationalisation	0.062*** (0.023)	0.099*** (0.025)
Coauthors Similarity	0.042 (0.048)	0.460*** (0.050)
Gender (male)	0.032*** (0.010)	0.033*** (0.010)
Associate professor	-0.011 (0.011)	0.015 (0.012)
Full professor	-0.025** (0.013)	0.035*** (0.014)
Postdoc	0.081*** (0.016)	0.102*** (0.018)
Constant	0.036*** (0.011)	0.015 (0.012)
Observations	456	473
Log Likelihood	389.517	362.026
Akaike Inf. Crit.	-757.034	-702.052
Bayesian Inf. Crit.	-711.686	-656.302

Note:

* p<0.1; ** p<0.05; *** p<0.01

Our limitations

- ▶ Coverage of Scopus
- ▶ Could not compensate by collecting data on Google Scholar, as only a few sociologists in Italy have activated a Google Scholar profile (19.7 %) While time effects were controlled on citations, our analysis did not consider important temporal aspects, such as the changing academic status of sociologists over their career, which might have relevant implications on productivity and important cumulative effects.
- ▶ Improve the analysis on embeddedness factors by looking at multi-level network effects, e.g., understanding whether collaboration networks and institutional embeddedness self-reinforce each other in generating effects on productivity.

2nd paper: “Evaluating the effects of ANVUR policies on research productivity of Italian sociologists”

- ▶ **Can policies reorient publication patterns against endogeneous forces?**

Repeated measurements Anova analysis with nested structure

- ▶ All publications of authors in **5** full years **before** and **after** ANVUR (2006-2010; 2011-2015)
- ▶ Examine the importance of institutional embeddedness
- ▶ Compare individuals embedded in different institutional levels before and after ANVUR
 - ▶ Academic level (status)
 - ▶ Scientific disciplinary sector
- ▶ Following (Snijders and Bosker 1999; Faraway 2005; Zuur et al. 2009), we used repeated measurements ANOVA models with nested structure
- ▶ An example (**within** and **between** group measurements)
 - ▶ Assistant professors are significantly more productive, measured by FSS and number of papers, compared to associate or full professors?
 - ▶ How assistant professors' research productivity have changed after ANVUR compared to before?

Table 1: Comparative table of Repeated measures Anova analysis to check overall ANVUR effect on research productivity measured by FSS

	Contrasting within and between group measurements				
	FSS as dependent variable				
	(1)	(2)	(3)	(4)	(5)
SPS/08	0.009 (0.009)				
SPS/09	0.034*** (0.012)				
SPS/10	0.020 (0.016)				
SPS/11	0.029 (0.020)				
SPS/12	-0.005 (0.020)				
Associate professors		0.026*** (0.009)			
Full professors		0.051*** (0.010)			
Level changed from 2010			0.002 (0.008)		
Medium FSS in 2010				0.010 (0.008)	
High FSS in 2010				0.265*** (0.010)	
Medium n.o. papers in 2010					0.111*** (0.016)
High n.o. papers in 2010					0.391*** (0.032)
∞	FSS after ANVUR	-0.007 (0.007)	0.002 (0.006)	-0.015*** (0.006)	0.006 (0.004)
	SPS/08 vs FSS af. ANVUR	-0.006 (0.010)			
	SPS/09 vs FSS af. ANVUR	-0.028** (0.013)			
	SPS/10 vs FSS af. ANVUR	-0.017 (0.018)			
	SPS/11 vs FSS af. ANVUR	-0.030 (0.022)			
	SPS/12 vs FSS af. ANVUR	0.001 (0.022)			
	Associate prof. vs FSS af. ANVUR		-0.019* (0.010)		
	Full prof. vs FSS af. ANVUR		-0.049*** (0.011)		
	Level changed vs FSS af. ANVUR			0.001 (0.009)	
	Medium FSS in 2010 vs FSS af. ANVUR				-0.002 (0.009)
	High FSS in 2010 vs FSS af. ANVUR				-0.199*** (0.012)
	Medium n.o. papers in 2010 vs FSS af. ANVUR				-0.080*** (0.018)
	High n.o. papers in 2010 vs FSS af. ANVUR				-0.268*** (0.035)
	Constant	0.018*** (0.006)	0.009 (0.006)	0.028*** (0.005)	0.000 (0.004)
	Observations	1,184	1,184	1,184	1,184
	Log Likelihood	1,163.277	1,173.358	1,157.663	1,422.773
	Akaike Inf. Crit.	-2,296.553	-2,328.717	-2,301.327	-2,827.546
	Bayesian Inf. Crit.	-2,220.403	-2,283.027	-2,265.790	-2,781.856

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 2: Comparative table of Repeated measures Anova analysis to check overall ANVUR effect research productivity measured by number of papers published

		Contrasting within and between group measurements				
		Number of papers as dependent variable				
		(1)	(2)	(3)	(4)	(5)
	SPS/08	-0.021 (0.014)				
	SPS/09	0.009 (0.017)				
	SPS/10	-0.008 (0.025)				
	SPS/11	0.037 (0.032)				
	SPS/12	-0.012 (0.025)				
	Associate professors		0.053*** (0.014)			
	Full professors		0.051*** (0.014)			
	Level changed from 2010			-0.011 (0.012)		
	Medium FSS in 2010				0.005 (0.012)	
	High FSS in 2010				0.160*** (0.014)	
	Medium n.o papers in 2010					0.120*** (0.012)
	High n.o papers in 2010					0.418*** (0.023)
6	N.o papers after ANVUR	-0.004 (0.010)	0.023** (0.010)	-0.003 (0.008)	0.007 (0.010)	0.055*** (0.008)
	SPS/08 vs papers af. ANVUR	0.027* (0.014)				
	SPS/09 vs papers af. ANVUR	0.010 (0.017)				
	SPS/10 vs papers af. ANVUR	0.009 (0.026)				
	SPS/11 vs papers af. ANVUR	-0.049 (0.032)				
	SPS/12 vs papers af. ANVUR	0.005 (0.027)				
	Associate prof. vs papers af. ANVUR		-0.032** (0.014)			
	Full prof. vs papers af. ANVUR		-0.018 (0.014)			
	Level changed vs papers af. ANVUR			0.020* (0.012)		
	Medium FSS in 2010 vs papers af. ANVUR				0.039*** (0.013)	
	High FSS in 2010 vs papers af. ANVUR				-0.007 (0.015)	
	Medium n.o papers in 2010 vs papers af. ANVUR					-0.044*** (0.013)
	High n.o papers in 2010 vs papers af. ANVUR					-0.196*** (0.024)
	Constant	0.054*** (0.010)	0.018* (0.010)	0.054*** (0.007)	0.026*** (0.009)	0.000 (0.007)
	Observations	776	776	776	776	419
	Log Likelihood	747.861	754.141	744.237	851.915	466.345
	Akaike Inf. Crit.	-1,465.722	-1,490.282	-1,474.474	-1,685.830	-914.689
	Bayesian Inf. Crit.	-1,395.910	-1,448.394	-1,441.895	-1,643.943	-878.348

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 3: Models comparing trend of publications in fascia A and non fascia A journals after ANVUR

	Contrasting general trends of publications	
	Number of papers in Fascia or non-Fascia journals as dependent variable	
	(1)	(2)
Publications in fascia A journals	0.007 (0.018)	
Publications in non fascia A journals		0.017*** (0.006)
Constant	0.080*** (0.016)	0.033*** (0.006)
Observations	362	645
Log Likelihood	152.887	663.171
Akaike Inf. Crit.	-295.773	-1,316.343
Bayesian Inf. Crit.	-276.315	-1,293.997

Note:

*p<0.1; **p<0.05; ***p<0.01

So what ?

- ▶ We **DO NOT** see a uniform trend of increase in research productivity (both FSS and n.o. papers) after ANVUR to conclude that this trend has been under the effect of National policy change
- ▶ Instead, we see some sub-group and sub-category level similarity and differences which seem to be mainly due to personal and individual level differences, that can be further looked into by analyzing individual coauthorship networks structure and evolution

Gender and ethnic patterns of publication in top sociology journals

(Success stories only!)

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January 10th, 2018

Main question of the study

Gender and ethnic
patterns of
publication in top
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- ▶ Can we find *gendered* and *ethnicized* publication patterns in **top sociology journals**?
- ▶ If yes, are these “*biases*” due to social mechanisms or scientific excellence?
- ▶ A collaboration with **Michèle Lamont**, Harvard university
- ▶ Replicating some of the main results of a research from **Teele and Thelen (2017)** on Political Sciences [see here](#)

Teele and Thelen (2017)

Gender and ethnic
patterns of
publication in top
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- ▶ Women are disproportionately under-published in top **political science** journals
- ▶ Largest percentage of publications were dominated by **all-male teams**,
- ▶ They suggested that this could be due to a *self-selection process*
- ▶ Women may be attracted more by **qualitative** research
- ▶ Also **structural discrimination** in higher education
- ▶ These journals are predominantly *quantitative*
- ▶ They would therefore submit less to these top journals
- ▶ Other research on AJS/ASR (e.g., Moody (2005);
Moody (2004); Light (2013))

Gender differences in academic success

Gender and ethnic
patterns of
publication in top
sociology journals

- ▶ Despite the rise of women in science (Cole and Zuckerman 1984; Cole and Zuckerman 1987; Young 1995)
- ▶ Women are penalized especially in **STEM** research (Cain and Leahey 2014; Lomperis 1990; Kahn 1993; Sheltzer and Smith 2014)
- ▶ Are **paid less** (Prpić 2002)
- ▶ Are preferably hired in **lower level academic positions** and in **less prestigious institutes** (Lomperis 1990; Heijstra, Bjarnason, and Rafnsdóttir 2015)
- ▶ They **publish fewer papers** and are cited less (e.g., Xie and Shauman (1998); Young (1995); Maliniak, Powers, and Walter (2013))

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Gender differences in scientific collaborations

Gender and ethnic
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- ▶ Women tend to establish **more homogeneous** and **smaller collaboration networks** (Grant and Ward 1991; Renzulli, Aldrich, and Moody 2000)
- ▶ This would decrease their chance to be part of the *core network of star scientists* (Moody 2004)
- ▶ They prefer **more diversified** research programs
- ▶ Their research is **less specialized**, penalizing their visibility and success (Leahy 2006; Leahy 2007)
- ▶ This could decrease their access to relevant resources for funding and promotion (Xie and Shauman 1998; Weisshaar 2017)
- ▶ Makes their academic career less stable or rewarding (Hancock and Baum 2010; Preston 1994)
- ▶ There is distortion in hiring committees due to family obligations (partner's job) (Rivera 2017)

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Why Sociology?

Gender and ethnic
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- ▶ Previous research suggests it is probably **less gender biased** than other disciplines, due to more women graduates (Lutter and Schröder 2016)
- ▶ Looking at the top, given that competitive pressure for publication is higher, could reveal general trends in hyper-competitive science today.
- ▶ Co-existence of **quantitative** and **qualitative** sub-communities

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- ▶ All AJS and ASR publications (extracted from Scopus on 20th January 2017)
- ▶ Fields: article title, authors' names and affiliation, and number of citations received.

Journal name	# papers	Sample Starts	Sample Ends
American Journal of Sociology	1153	1946	2016
American Sociological Review	1440	1965	2016
Total number of papers	2593	-	-

Gender imputation!

- ▶ Used authors' **first names**
- ▶ Send automatic requests with R scripts to a database of numerous names extracted from social media profiles (Wais 2016)
- ▶ Simultaneously a research assistant (RA) **hand-coded author gender**
- ▶ Any conflicting attribution case, the RA researched the online profile of authors, whenever available.
- ▶ Cases of differences (*41 out of 2,897 authors*), used the hand-coded gender
- ▶ Missing data in the hand-coded procedure (*22 out of 2,897 authors*), used the automatic gender extracted from API
- ▶ Only 17 out of 2,897 missing genders (0.58%)

Ethnicity imputation!

- ▶ Used another API, based on **US census data** (Khanna, Imai, and Jin 2017)
- ▶ **Last names** of authors, provides a probability distribution of names in: *white, black, Hispanic, Asian* and *other*
- ▶ In parallel, our RA checked each of the 2897 authors' online profiles
- ▶ A photograph of the author exist, **hand-coded the ethnicity**
- ▶ Cases of differences between the two procedures (*132 out of 2,897 authors*), used the hand-coded category
- ▶ Cases of missing data in our hand-coded procedure (*426 out of 2,897 authors*), used the automatic ethnicity extracted from API
- ▶ We ended up without any missing ethnicity

Gender & Ethnic composition of each paper

Gender and ethnic
patterns of
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- ▶ Suggested by Young (1995), Maliniak et al. (2013) and Teele & Thelen (2017)
- ▶ Coded any article as:
 - ▶ ***Solo male, Solo female, All male team, All female team, and Cross gender collaboration***
 - ▶ ***Solo white, Solo non-white, All white team, All non-white team, and Cross ethnic collaboration***

Gender and Ethnic composition of community

Gender and ethnic
patterns of
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- ▶ American Sociological Association (hereafter **ASA**) annual membership as a proxy of the gender and ethnicity composition
- ▶ ASA membership data were not available for some years (i.e., 1982-1998, and 2000)
- ▶ So, in comparative results (ASA and our authors), we included only 18 years (1982, 1999, 2001-2016) and excluded a sub-set to match those years

Authors CV and background information

Gender and ethnic
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- ▶ Checked the **CV** and online information of each author
- ▶ Identified *institution that awarded PhD*
- ▶ Current gender and ethnicity composition of the first **12 top ranked Ivy-League sociology departments** in the Shanghai ranking
- ▶ From their official websites (“Shanghai Global Ranking of Academic Subjects: Sociology” 2017)
- ▶ **Goal:** Whether women and minorities were penalized even when they could potentially benefit from an *Ivy-League effect*.

Women: AJS & ASR authors vs. ASA members

Gender and ethnic
patterns of
publication in top
sociology journals

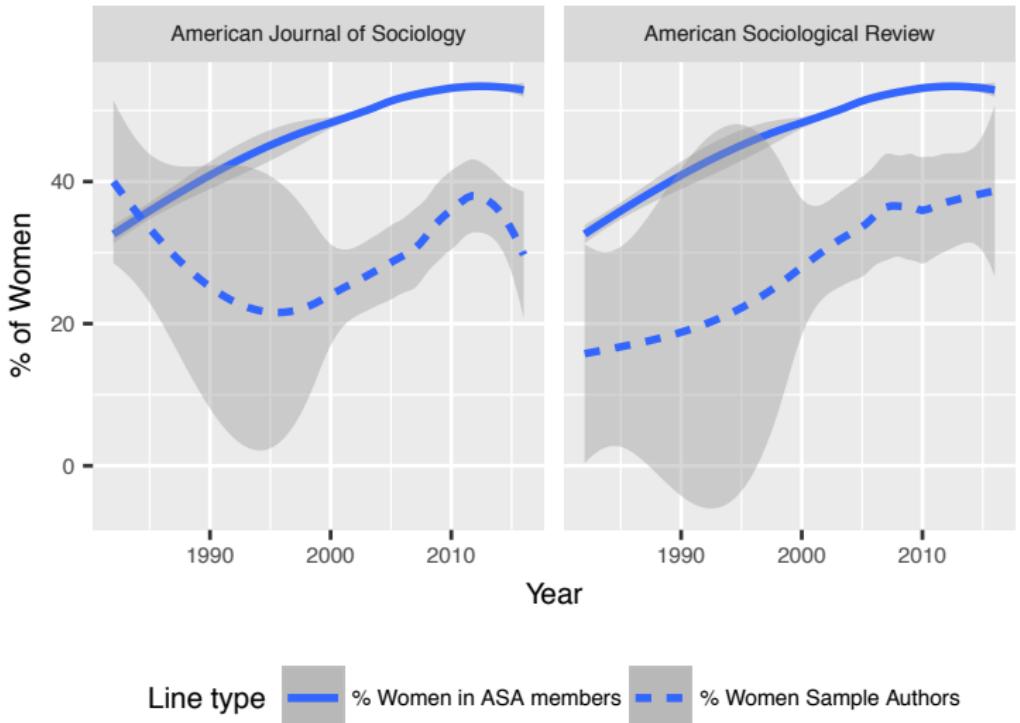
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Gender trend of authorship in AJS and ASR

Gender and ethnic
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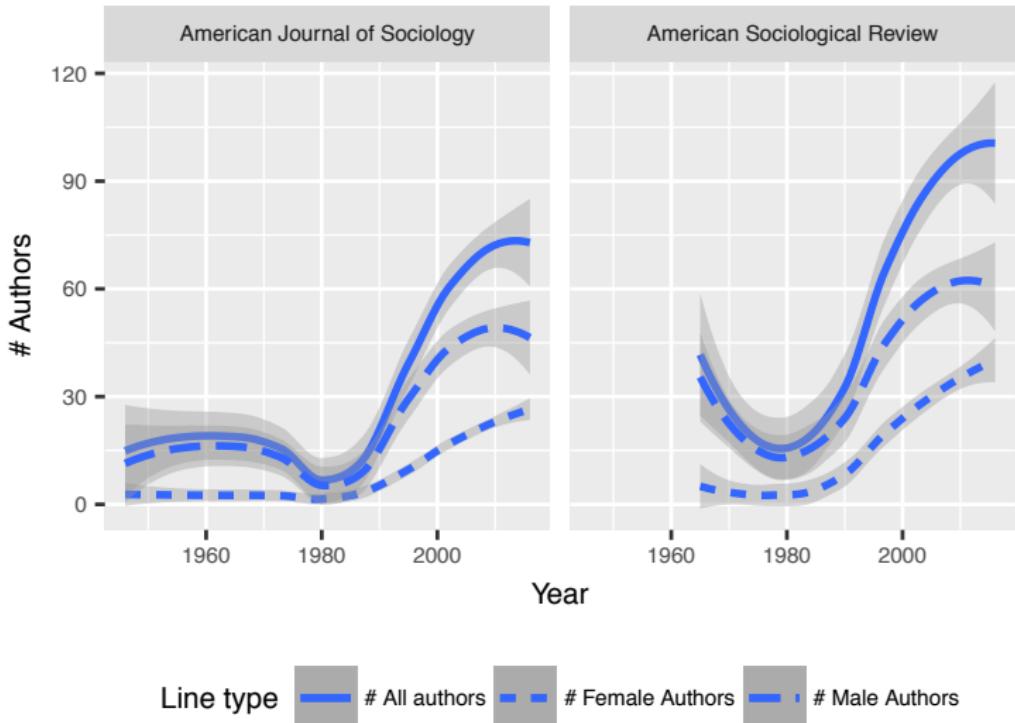
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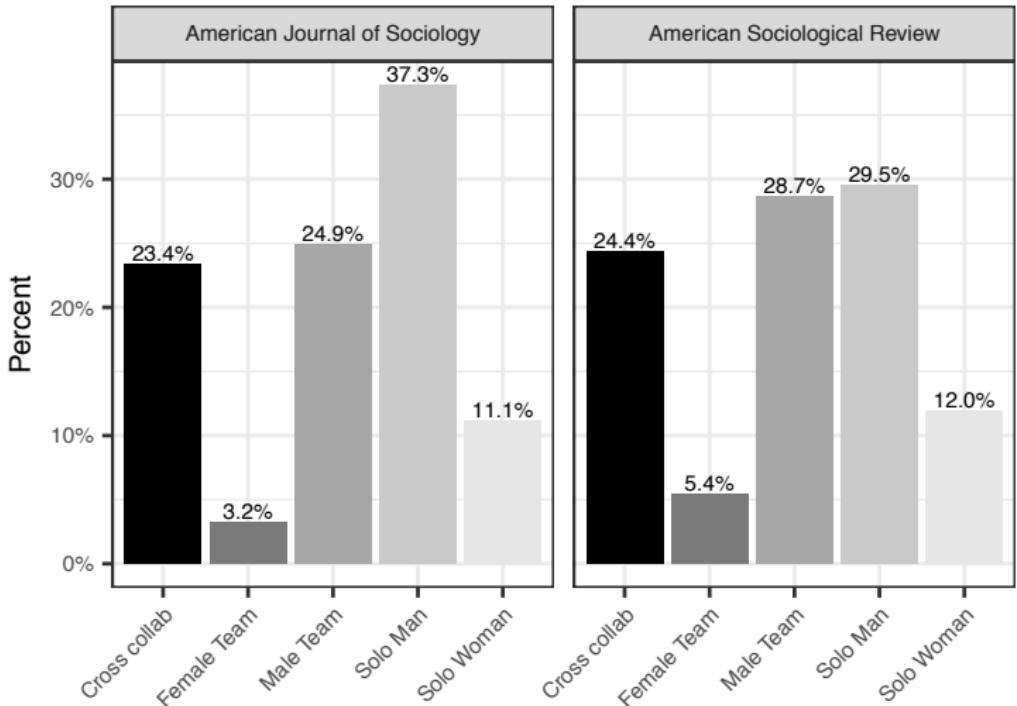
Co-authorship patterns

- ▶ **84%** of articles in AJS and ASR had **at least one** (or more) *male* author(s)
- ▶ Only **40%** had at least one (or more) *female* author(s)
- ▶ Picture approximates a 70/30 ratio, which is slightly better than what suggested by Young (1995)'s study in political sciences
- ▶ But similar to what found by Teele and Thelen (2017)
- ▶ It seems that fields such as sociology and political sciences do not dramatically differ in terms of gender patterns.

Journal Name	# All Papers	# All Authors	# Men	% Men	# Women	% Women
AJS	1153	2023	1469	72.61	547	27.04
ASR	1440	2686	1860	69.25	813	30.27
Total number	2593	4709	3329	-	1360	-

Gender co-authorship in AJS and ASR

- ▶ Only **11%**, solo female vs. **37%** in AJS and **29.6%** in ASR of solo male
- ▶ Only **5.4%** in ASR and **3.2%** in AJS by all-female teams



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Cross-gender co-authorship increased!

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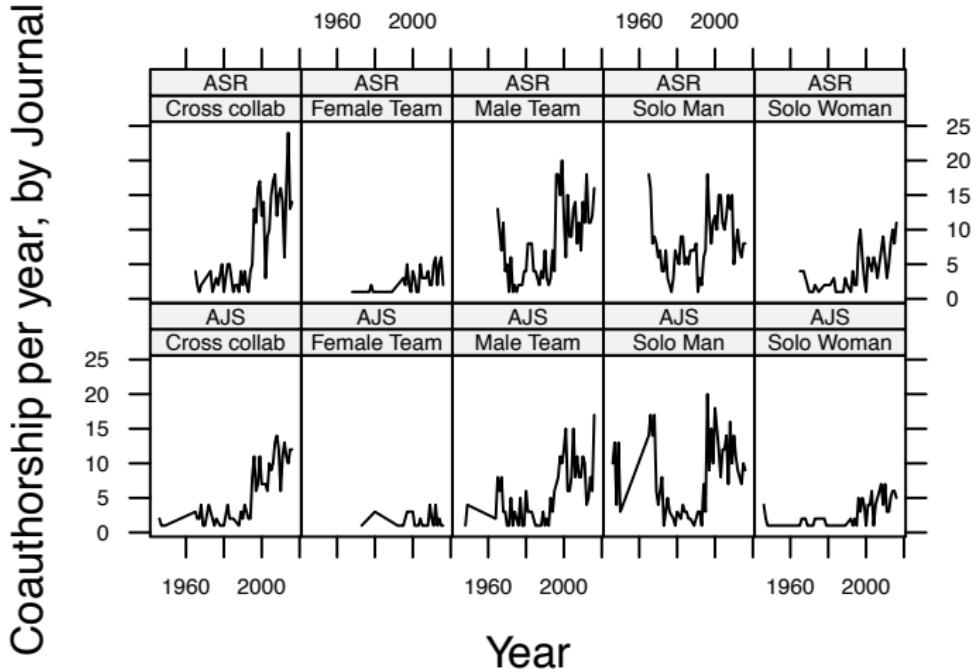
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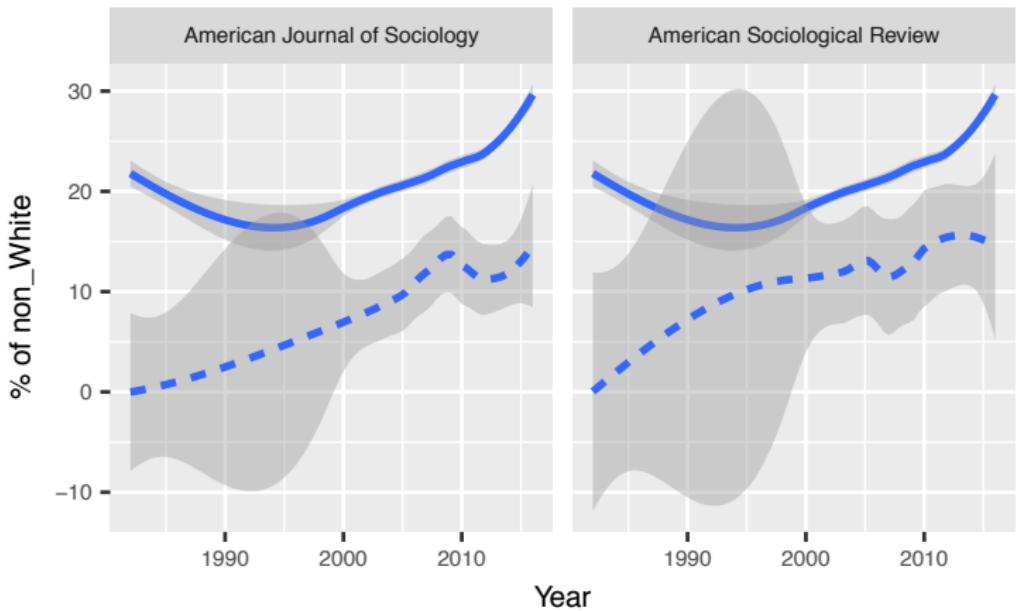
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Non-white: AJS & ASR authors vs. ASA members

- ▶ Number of non-white authors **has increased**, but less pronounced than non-white members in ASA (a maximum 30% of members)
- ▶ The ratio was below 20% in AJS and below 25% in ASR.



Gender and ethnic
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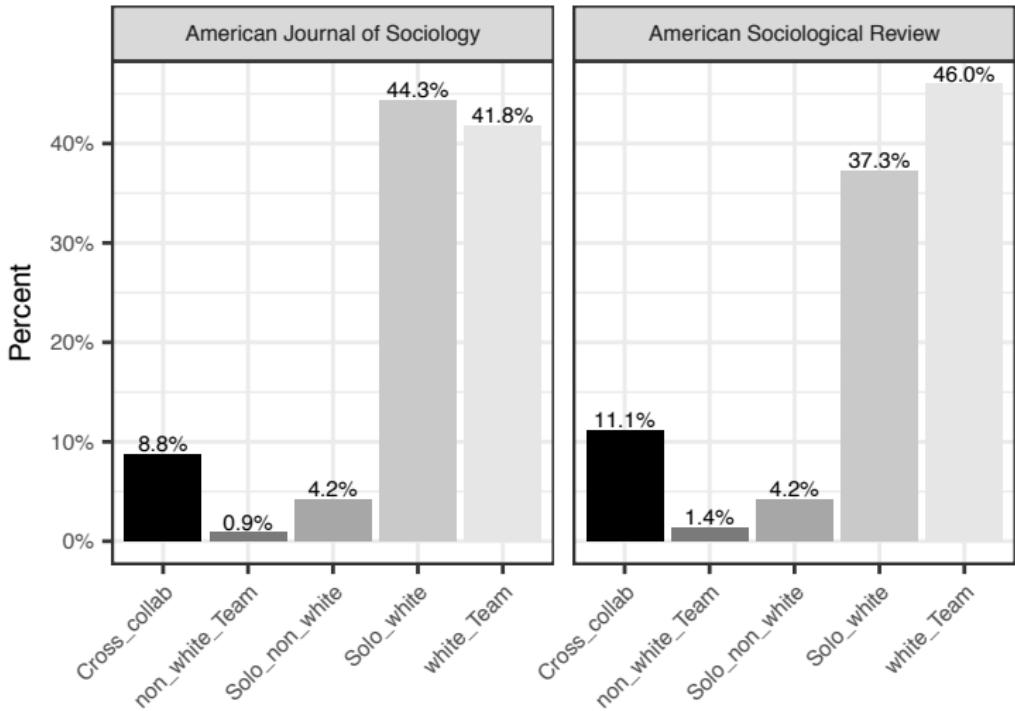
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Ethnic co-authorship in AJS and ASR

- More than **80%** authored exclusively by white authors, alone or by all-white co-authors
- Only **1%** published by a team of *non-white* co-authors



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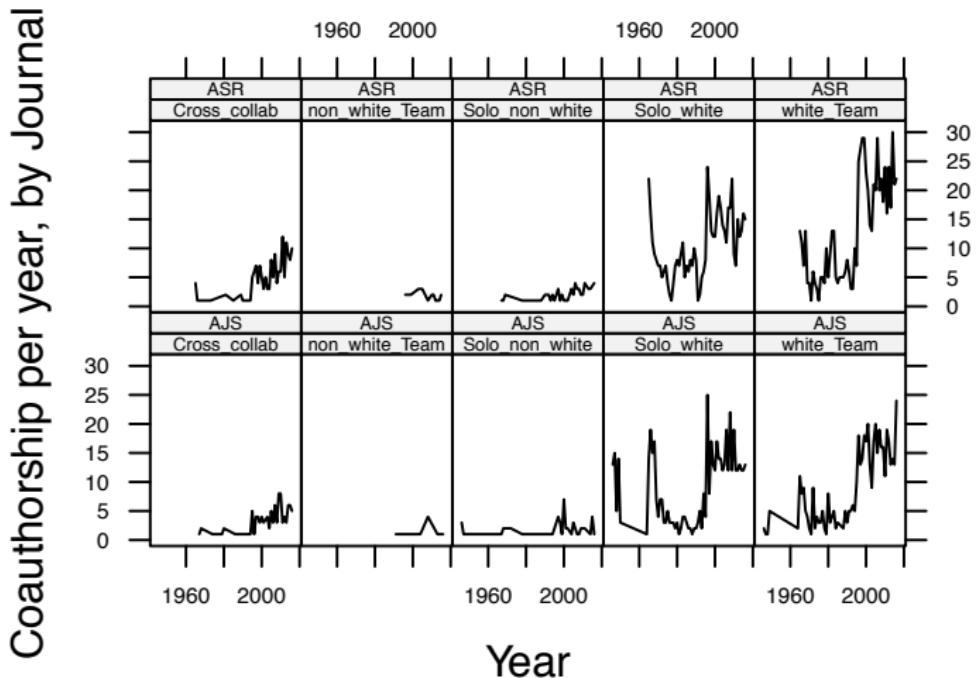
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Ethnic co-authorship dynamics in AJS and ASR

- ▶ Ethnic gap in the academic élite seems to persist for a long time



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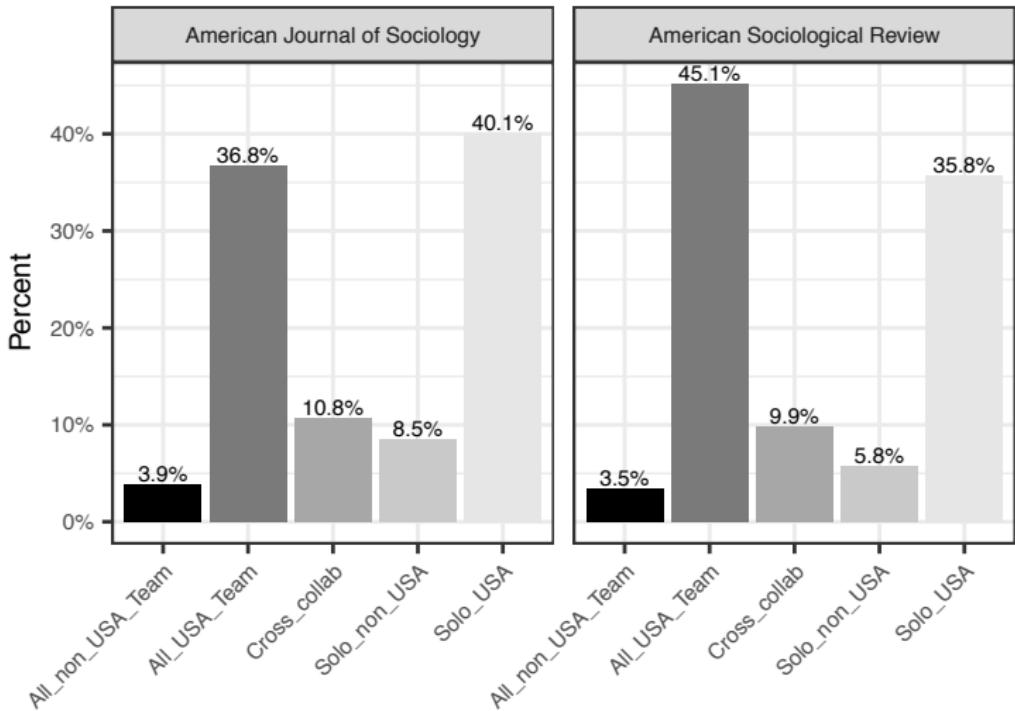
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American vs. non-American in AJS and ASR

- ▶ **80%** solo-American or teams of American authors
- ▶ Penalties are even probably higher against non-white, female scholars *outside the U.S.*



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Gender co-authorship dynamics between Ivy and non Ivy-League

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- ▶ Women had only a **21.5%** premium in terms of higher probability of publishing in AJS and ASR when they were a member of a *prestigious sociology department*,
- ▶ Against a **62%** premium for men
- ▶ Cross-gender collaboration was more frequent among members of *less prestigious departments* (20.8% vs. 16.5%)
- ▶ All-female teams, higher among **non-Ivy-League** (4.5% vs. 2.7%)

Gender and ethnic
patterns of
publication in top
sociology journals

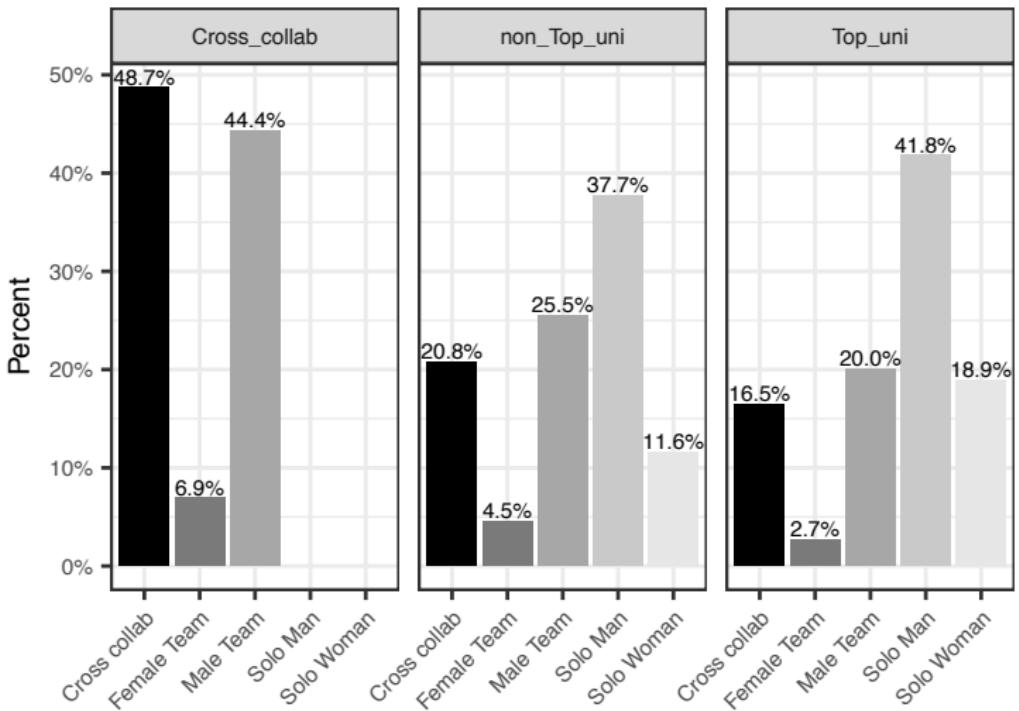
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Gender and ethnic patterns of publication in top sociology journals

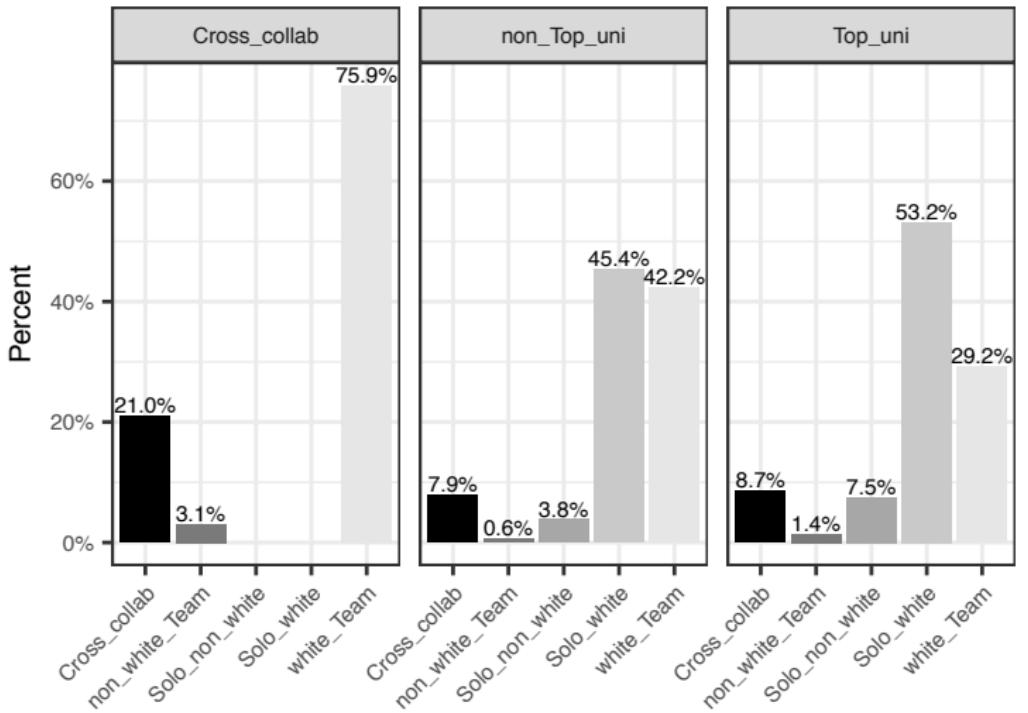
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Gender patterns of hiring in Ivy-League sociology departments

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- ▶ These departments hired men dis-proportionally
- ▶ Exception of **New York University** (46.88% of female among faculty members)
- ▶ Similar to what Sheltzer and Smith (2014) found in the life sciences

Gender and ethnic patterns of publication in top sociology journals

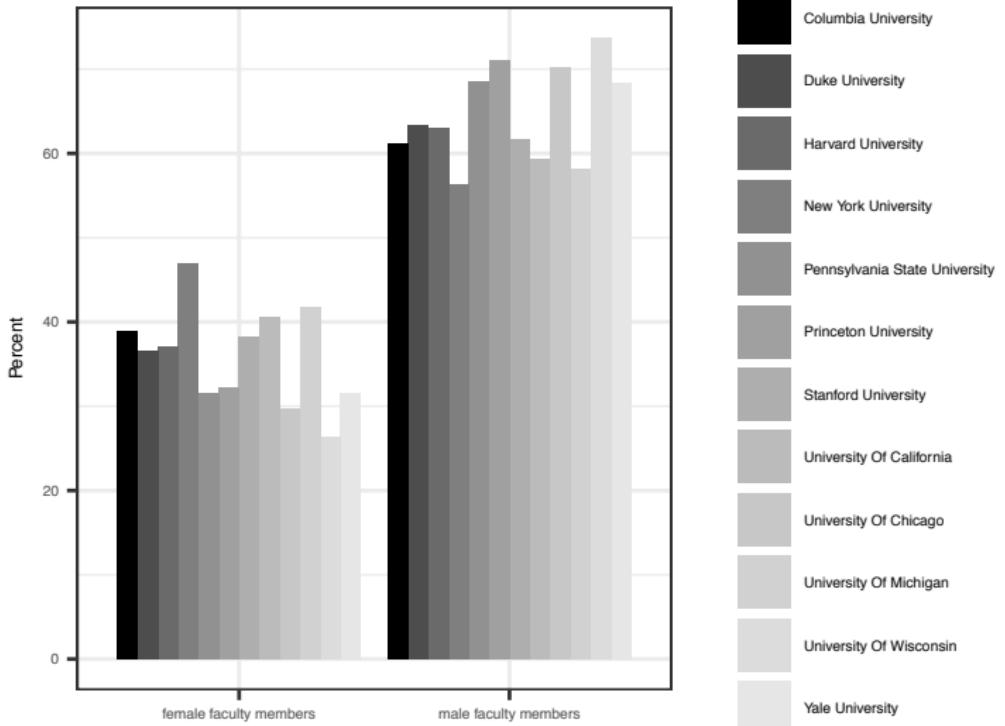
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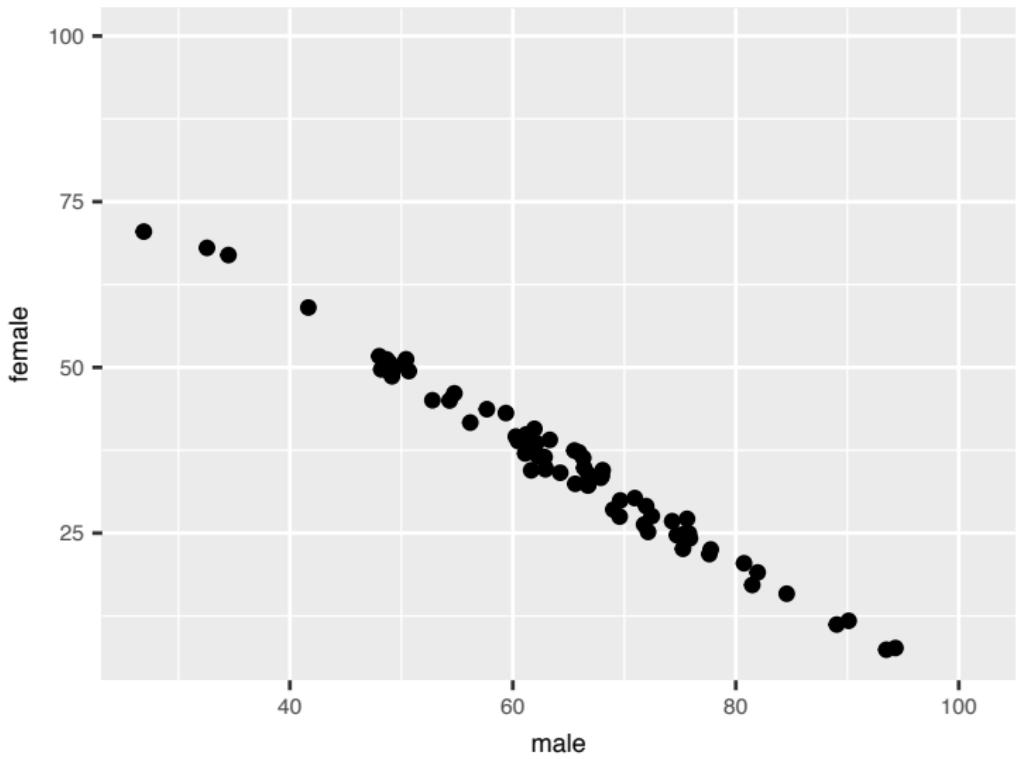
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Gender patterns of publication in top-100 universities

- Hiring and academic success are **significantly gendered**



Gender and ethnic
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- ▶ Ethnic minorities are **penalized in hiring** in Ivy-League sociology departments
- ▶ More favorable ethnic balance of 30 (non-white)/70 (white) balance reached by **Harvard University**
- ▶ Hiring decisions in top institutes could reflect or amplify gender and ethnic patterns that originate from bias in *education, funding and publication* (Weisshaar 2017)

Gender and ethnic patterns of publication in top sociology journals

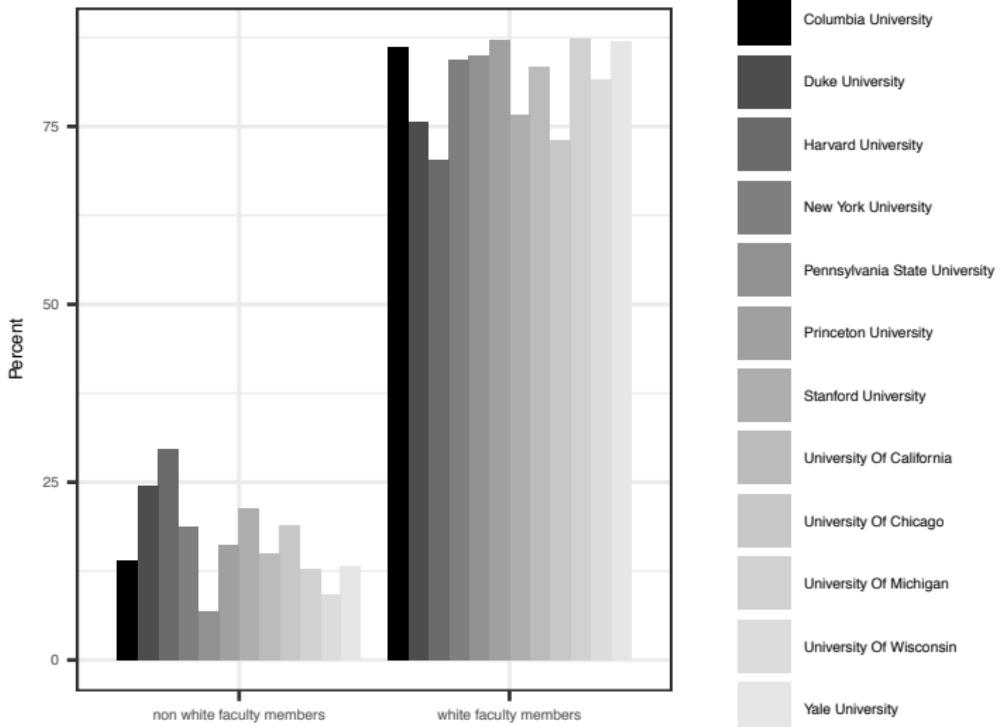
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Comparative models of number of publications

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	Research products as dependent variables		
	Total Publications (1)	Publications before 2000 (2)	Publications after 2000 (3)
Gender Male	0.021*** (0.004)	0.192*** (0.064)	0.260*** (0.059)
Ethnicity Black	-0.006 (0.017)	0.108 (0.285)	-0.209 (0.222)
Ethnicity Hispanic	0.009 (0.021)	0.563* (0.325)	-0.086 (0.276)
Ethnicity White	0.020*** (0.007)	0.245** (0.124)	0.174* (0.091)
Constant	0.014 (0.012)	1.051*** (0.151)	1.250*** (0.120)
Observations	2,716	1,293	1,708
Log Likelihood	2,212.361	-1,842.347	-2,706.775
Akaike Inf. Crit.	-4,408.723	3,700.694	5,429.549
Bayesian Inf. Crit.	-4,361.468	3,742.012	5,473.094

Note:

* p<0.1; ** p<0.05; *** p<0.01

Is it a matter of research subjects? (STM) 2/2

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Topic Modeling with Python

The video player interface shows a presentation slide titled "Topic Modeling with Python". The slide features a diagram illustrating the Topic Modeling process. On the left, a woman is speaking at a podium. On the right, the diagram shows a flow from "collection of text documents" (containing "M Documents" and "N Words") through a central process to "Topics" (represented by circles with "K Topics" and "cluster of words") and "Document" (represented by a grid with "phi" and "frequency of words"). Concentration parameters "alpha" and "beta" are shown on the left. The slide is titled "Parameters and variables". A speech bubble logo for "PY TEXAS" is visible. The video player controls at the bottom indicate it is at 16.46 / 50:13.

CONTINUUM
Parameters and variables

M Documents
N Words
collection of text documents

alpha
beta
Concentration parameters

K Topics
Topic
cluster of words
wordtokens
psi

Document
phi
frequency of words
distribution of topics

ch_dolg chdolg

PY TEXAS

16.46 / 50:13

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Results of STM (high prob)

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Topic	V1	V2	V3	V4	V5	V6	V7
1	racial	black	ethnic	segregation	white	race	population
2	class	crime	law	legal	rights	race	cultural
3	organizational	work	practices	organization	organizations	management	process
4	public	religious	social	violence	community	religion	school
5	human	social	article	states	united	male	female
6	family	effects	educational	education	life	data	children
7	gender	labor	market	women	employment	men	womens
8	economic	income	inequality	countries	growth	welfare	development
9	political	social	state	movement	organizations	politics	movements
10	social	network	networks	cultural	theory	status	model

Results of STM (frex, low prob)

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Topic	V1	V2	V3	V4	V5	V6	V7
1	ethnic	segregation	whites	residential	immigrants	hispanic	assimilation
2	homicide	offenders	classification	interviewers	law	tolerance	citizenship
3	accountability	lawyers	leaders	conversation	rational	cohesion	formalization
4	religious	church	pluralism	schools	religiosity	conservative	violence
5	delinquency	socioeconomics	disorders	male	human	govt	juvenile
6	cohort	cohorts	adulthood	childhood	children	birth	college
7	jobs	wage	wages	career	workers	markets	market
8	welfare	foreign	poverty	investment	growth	economic	countries
9	movements	protest	mobilization	polity	voting	movement	protests
10	homophily	network	networks	trust	exchange	generalized	scientific

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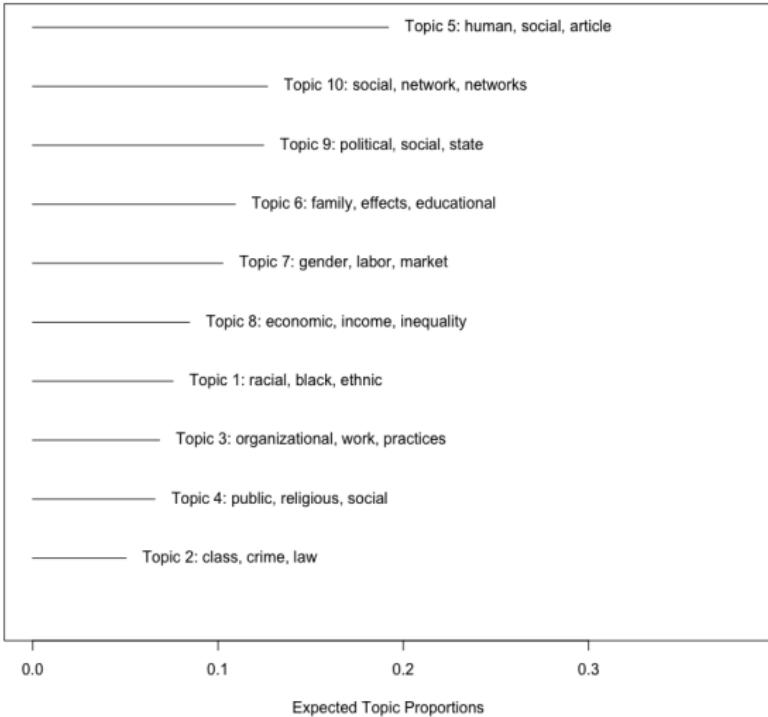
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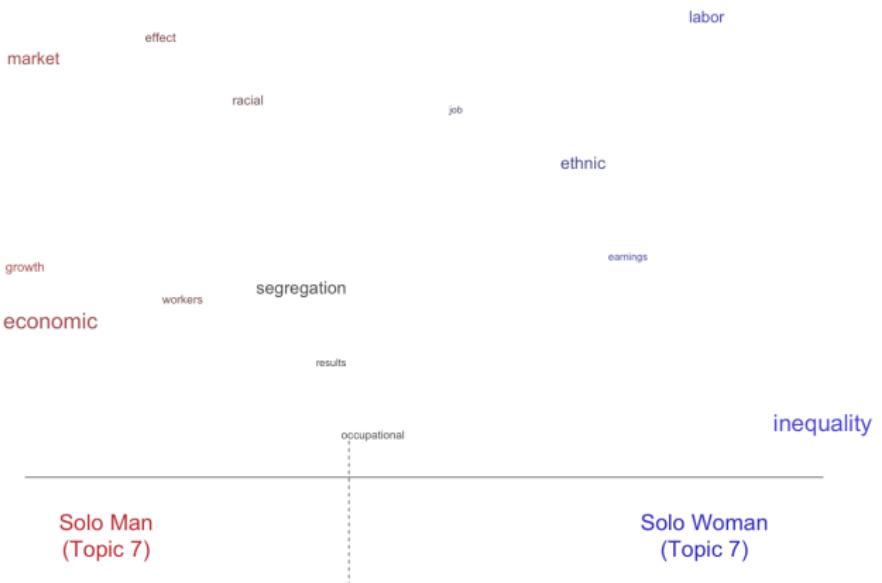
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Top Topics



Gender and ethnic patterns of publication in top sociology journals



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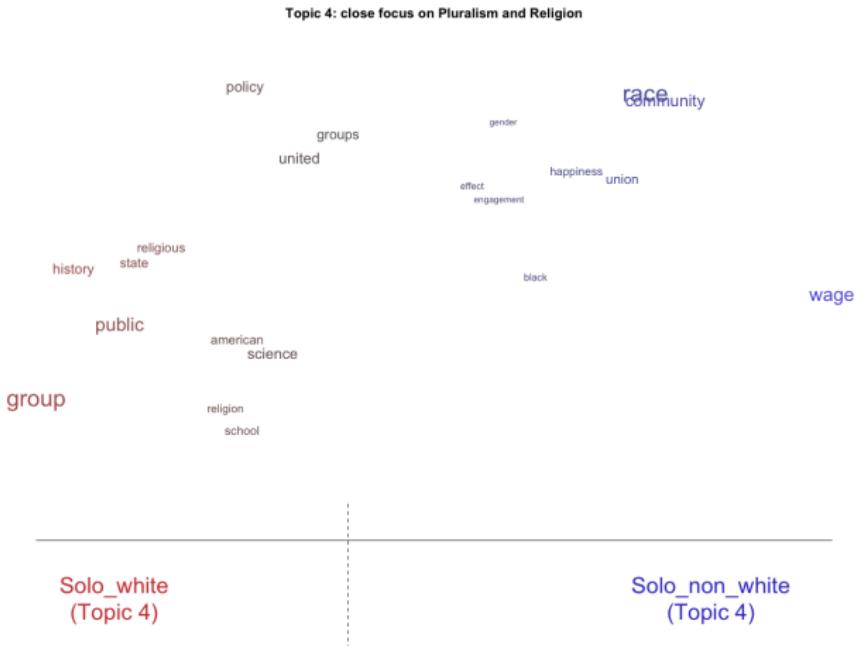
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Conclusions and discussion

Gender and ethnic
patterns of
publication in top
sociology journals

- ▶ Prestigious journals especially **favor white male authors** and their exclusive co-authorship ties
- ▶ Situation has improved since 2000, but, these gender and ethnicity penalties seem to have persisted even after considering the influence of academic affiliation
- ▶ The 'Ivy-League' effect greatly **benefits only white male authors**
- ▶ Conventional standard of collaboration is the solo-male author or all-male teams, whereas women are less involved in co-authorships (Renzulli, Aldrich, and Moody 2000; Moody 2004).
- ▶ Top journals in sociology seem more favorable to cross-gender collaborations than political sciences journals.

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Conclusions

- ▶ Estimating publication bias and its sources would require **more in-depth data** and analysis on **journal submissions**, referees and editors (Østby et al. 2013; Siler and Strang 2014)
- ▶ It is difficult to understand whether these outcomes incorporate **endogenous self-selection bias** tracing back to education, type of research, funding and career (e.g., González-Álvarez and Cervera-Crespo (2017); Hancock and Baum (2010); Sheltzer and Smith (2014)).
- ▶ Examining these differences is also key to discuss the role of diversity in academia
- ▶ **Encouraging diversity is beneficial** to avoid group thinking and mainstream attitudes (Nielsen et al. 2017), detrimental especially in periods of uncertainty as they reduce epistemological and methodological pluralism
- ▶ These patterns could be less pronounced in average and less competitive journals

Limitations (Success stories only!)

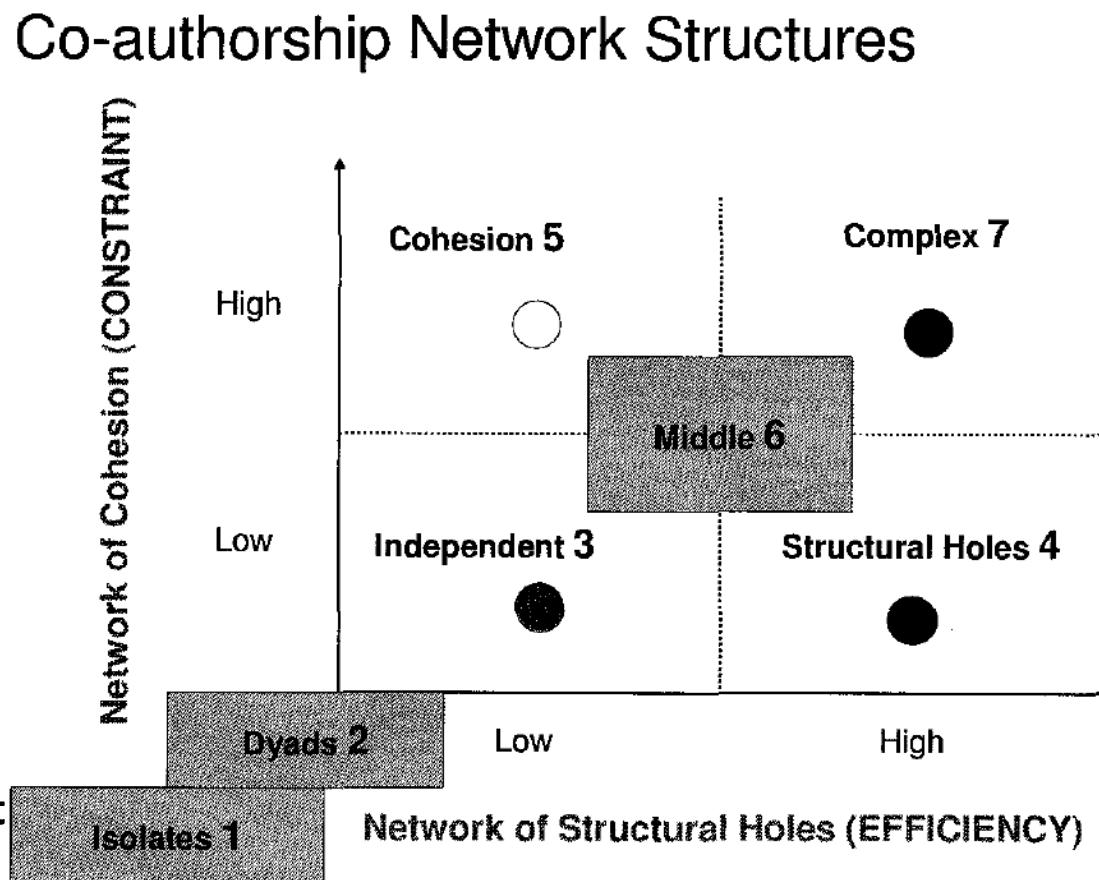
- ▶ Our data **do not cover** the entirety of all of the academic domain, from *education to funding and promotion*
- ▶ Looking only at publications does not help to understand even the gate-keeping role of journal editors, editorial boards and referees
- ▶ Our results cannot help understand editorial measures that might counterbalance these patterns
- ▶ A more in-depth attention to *topics, methods* and *fields* could help reveal vicious circles and self-reinforcing distortions in intellectual capital investment, which could point to education and training more than publications (Kahn 1993)
- ▶ Women and ethnic minorities may have fewer chances to be published in these top journals because they **do not perform** the type of research that these journals prefer (Teele and Thelen 2017)

What I would like to do in CWTS

- ▶ complete the study on co-authorship networks in form of an article (which will be a chapter of my thesis)

Theoretical framework

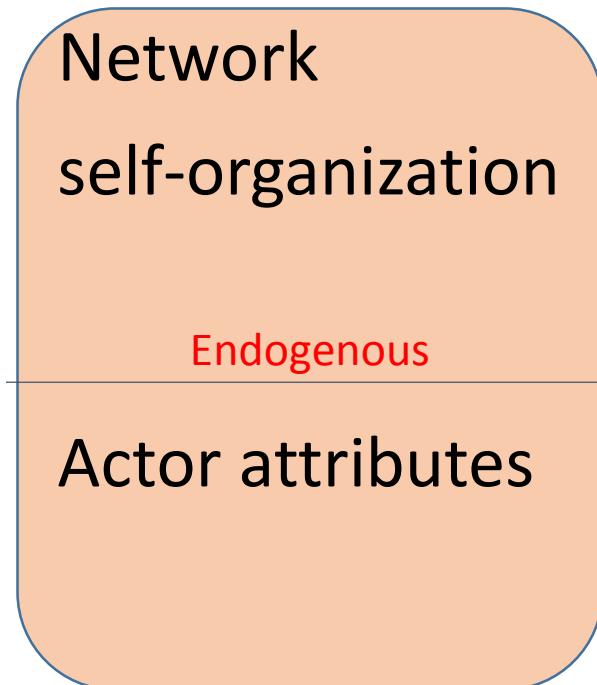
- Social Capital
 - Cohesion (Coleman)
 - Structural Holes (Burt)
- coauthorship network structures and success in publications
- 7 grouping of coauthorship strategies authors use
- Scholars who use both cohesive relationships and bridge between different communities to further their publication chances (called complex strategy in this work) are the most interesting scientists that manage between coordination costs and pros of cohesive groups in publication activity



Rumsey-Wairepo, A. (2006); Kuzhabekova, A. (2011)

Theories of social influence and social selection in tie formation

How and
why
collaboration
ties form?



Activity / popularity

Reciprocity

Closure

Brokerage

Sender effect

Receiver effect

Mix of sender & receiver

Other networks (multiplexity)

Social factors & context

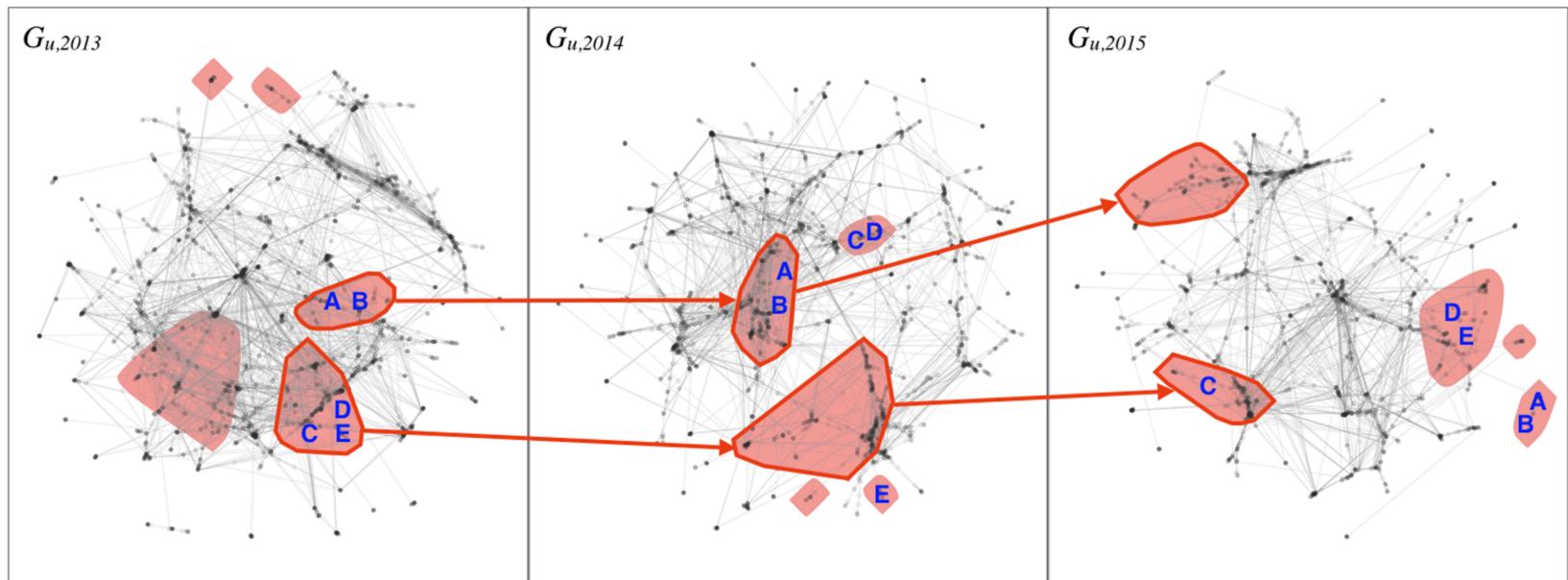


Fig 1. Extracting co-membership relationships from collaborative subgroups. Red shaded areas are yearly collaborative subgroups. Red arrows indicate sequences identified as *inter-temporal* collaborative subgroups. Investigators A and B are in the same yearly collaborative subgroup for all the 3 years: $g_c(A,B) = 3$. However, only for 2 years are they in the same *inter-temporal* collaborative subgroup: $g_y(A,B) = 1$. Investigators C and D are in the same yearly collaborative subgroup for two consecutive years ($g_c(C,D) = 2$), but this is not an *inter-temporal* subgroup ($g_y(C,D) = 0$). Investigators D and E are in the same yearly collaborative subgroup for two non-consecutive years ($g_c(D,E) = 2$), but they are never in the same *inter-temporal* collaborative subgroup ($g_y(D,E) = 0$).

**Thanks a lot for your attention
I will be happy to hear your comments/suggestions**
Email: akbaritabar@gmail.com