

# ANALYTICAL SOCIOLOGY AND BIG DATA

## RESEARCH SEMINAR

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Instructors:

Daniel Alexandrov,  
Valeria Ivaniushina,  
Kirill Maslinsky,  
Olesia Volchenko

2018/2019

Higher School of Economics — Saint Petersburg

# WHY?

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1. Analytical Sociology
2. Big Data

MICRO  
DEPARTMENT

MACRO  
DEPARTMENT

ANALYTICAL SOCIOLOGY

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Any academic discipline has its own useful dichotomies.

In sociology:

- Macro — Micro
  - Macroprocesses are considered separately (e.g., segregation)
  - Microinteractions — separately
- Quantitative — Qualitative
  - Macroprocesses are studied using quantitative methods
  - Microprocesses — qualitative

# Analytical sociology\*

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\*Explaining macroprocesses through the analysis of interactions at the micro-level.

# Analytical sociology\*

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\*Explaining macroprocesses through the analysis of interactions at the micro-level.



**BIG DATA**

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# Big Data<sup>†</sup>

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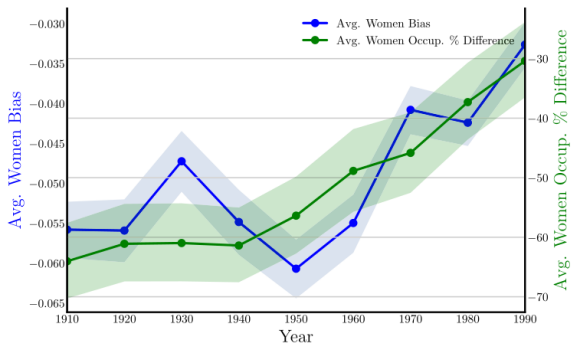
<sup>†</sup>Buzzzzword alert! The data is not necessarily *that* big. Analysis methodology that goes from macro to micro (and back) is what matters.



# Big Data<sup>†</sup>

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**Fig. 2.** Average gender bias score over time in COHA embeddings in occupations vs. the average percentage of difference. More positive means a stronger association with women. In blue is relative bias toward women in the embeddings, and in green is the average percentage of difference of women in the same occupations. Each shaded region is the bootstrap SE interval.

Garg, N., Schiebinger, L., Jurafsky, D., & Zou, J. (2018). Word embeddings quantify 100 years of gender and ethnic stereotypes. *Proceedings of the National Academy of Sciences*, 115(16), E3635-E3644.

## ARTICLES THAT WE LIKE

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Fatehkia, M., Kashyap, R., & Weber, I. (2018). Using Facebook ad data to track the global digital gender gap. *World Development*, 107, 189-209.

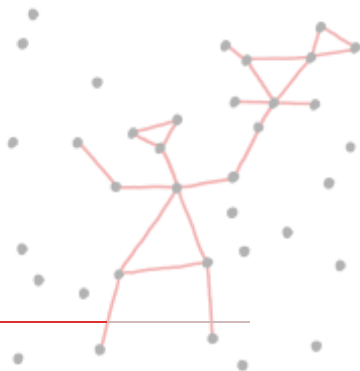
Thorstad, R., & Wolff, P. (2018). A big data analysis of the relationship between future thinking and decision-making. *Proceedings of the National Academy of Sciences*, 115(8), E1740-E1748.

Zhong, C., Chan, H. W., Karamshu, D., Lee, D., & Sastry, N. (2017). Wearing Many (Social) Hats: How Different are Your Different Social Network Personae?. *arXiv preprint arXiv:1703.04791*.



RECRUITING

$$R^2=0.06$$



REXTHOR, THE DOG-BEARER

I DON'T TRUST LINEAR REGRESSIONS WHEN IT'S HARDER TO GUESS THE DIRECTION OF THE CORRELATION FROM THE SCATTER PLOT THAN TO FIND NEW CONSTELLATIONS ON IT.

## WE ARE LOOKING FOR

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Students, who are:

- Enthusiastic about data and data collection<sup>‡</sup>
- Ready to dive into the methodology of data analysis
- Are not afraid to try themselves
- Are interested in joining quantitative and qualitative research

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<sup>‡</sup>No matter how: download gigabytes from twitter, or estimate the density of cigarette butts on a square meter near a subway station.

## WE OFFER

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- Analysis of the articles that we like
- Individual and group projects on data analysis
- Free choice of topics of your research essays
- Preparation for the presentations at the conferences and for publications