RUTGERS
School of Communication and Information

Computational Social Science

Doctoral Seminar

16:194:630

Spring 2026

Instructor: Dr. Katherine Ognyanova

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Online Office Hours: Book your preferred time at ognyanova.youcanbook.me
Zoom video or audio call: tinyurl.com/office-hours-ko

Course Time: Thursday, 2:00pm-5:00pm

Course Zoom: tinyurl.com/css-zoom-2026

Course Website: rutgers.instructure.com/courses/395824

Course Description

In a digital age, researchers have access to large-scale data describing complex social systems. This seminar offers an introduction to tools and techniques used to obtain and analyze such data. The course examines computational social science methods and their applications to the study of communication, information, and human behavior. Theoretical discussion is combined with hands-on training using the R programming language.

Learning Objectives

At the end of the course, students will be able to:

- Critically evaluate computational social science research
- Design a study using computational methods to examine human behavior
- Collect, process, and analyze online data (including text and network data)
- Understand and apply ethical digital research practices

Class Format

This course will be conducted online, synchronously over Zoom. The first half of each class session will include a brief lecture and theoretical discussion. The second half of our meetings will be spent doing hands-on coding exercises using the methods we have discussed that day.

Contact Information

You can sign up for a meeting at ognyanova.youcanbook.me. If the times listed there do not work for you, you can email to schedule an appointment. The office hours Zoom link is at tinyurl.com/office-hours-ko.

The most reliable way to reach me during the week is by email. Send any questions, ideas, or concerns related to the class to katya.ognyanova@rutgers.edu. Please include "SCI 630" in the email subject – that ensures your message will be tagged as high-priority mail and will receive prompt attention. I will typically respond within a couple of days of receiving your email.

Required Readings

Readings will be available on the course's Canvas website (canvas.rutgers.edu). Log in using your Rutgers NetID, navigate to the course site, and browse the *Course Readings* page. The readings for each week of our class are also listed in the *Course Outline* section of this syllabus.

Recommended books for the course include:

- Salganik, M. J. (2017). *Bit by Bit: Social Research in the Digital Age*. Princeton University Press. Available to read online or purchase on Amazon.
- Wickham, H., & Grolemund, G. (2023). *R for Data Science, 2nd Ed.* O'Reilly Media. Available to read online or purchase on Amazon.
- Long, J. D., & Teetor, P. (2019). *R Cookbook, 2nd Ed.* O'Reilly Media. Available to read online or purchase on Amazon.
- Silge, J., & Robinson, D. (2017). *Text Mining with R*. O'Reilly Media. Available to read online or purchase on Amazon.

Required software

The hands-on portion of this class will use the R language for statistical computing. R is widely used in both academic and corporate settings. Open-source and versatile, it has a large user community and a thriving ecosystem of packages that expand its functionality.

All software and services listed here are free or have a free version for non-commercial use. For your work in the course, you will need to do the following:

- Install **R**: A powerful platform for data analysis. (cran.r-project.org)
- Install **RStudio**: a user-friendly interface for R (posit.co/download/rstudio-desktop/)
- Register a free account at Posit Cloud, an online environment that allows users to work on collaborative R projects from a browser
- Register a free account at GitHub, a collaborative platform that offers code management and version control

Course Attendance

You are expected to attend all classes. If you are unable to attend classes for longer than one week, you should contact a dean of students who can help verify your circumstances. University policy excuses absences due to religious observance or participation and permits students to make up work missed for that reason. Please notify me at least two weeks in advance if you are unable to come to class or take an exam due to religious observance.

Course Requirements and Evaluation

Participation (200 points)

In this course, we will work together to review and examine critical questions and themes related to computational social science. Everyone is expected to be active in contributing to the conversations we will have in class. You should read all the required materials carefully and thoroughly, reflect critically on their strengths and weaknesses, identify their key points, and be prepared to discuss them. In the hands-on portions of the course, we will also discuss and interpret example code used in computational analyses. You should be able to follow the logic of the code, understand what it is doing, and explain how it connects to the underlying methodological choices.

Lab assignments (300 points)

The course requirements include completing a total of six lab assignments worth 50 points each. Each assignment will ask you to write R code to complete a set of tasks similar to those covered in that week's class. In some cases, you will also have to interpret the results obtained by running the code and write a summary of your findings. Each lab will be due a week from the day when it was assigned. Late labs can be submitted by **May 1** but will have 10 points deducted for the delay.

Research proposal (100 points)

The first step towards completing your final project for this class will be to submit a proposal describing the design of your study. The proposal should be 3-5 pages long, excluding references. The proposal should include: (1) a brief theoretical setup grounding your research in existing literature; (2) research questions or hypotheses; (3) description of the data or data collection; (4) a proposed methodology outlining the analytical approach. The goal of this assignment is to produce a well thought-out research design. You do not need to have all the details, but you should show that the project is feasible and methodologically grounded.

Design outline (100 points)

For this assignment, you need to submit a detailed description of the data and planned analysis for your final project, incorporating any feedback received on your initial proposal. If your research questions or hypotheses have changed since your proposal, include the revised versions.

This outline should describe the data you will use: where you will find it or how you will collect it, key variables or constructs, and any preprocessing or inclusion/exclusion decisions.

You should also outline your analytical strategy, specifying the methods to be used, how variables will be operationalized, and how the analysis will address the research questions or hypotheses.

Note any revisions to the project design prompted by feedback on the proposal. The goal of this assignment is to demonstrate that the project design has been translated into a clear and feasible analytical plan. You are not expected to have any results at this stage, but the proposed analysis should be sufficiently detailed to be implemented.

Final project (300 points)

For your final project, you should design and conduct an original study using the computational methods discussed in this class. Given the limited time of the course, your work should not incorporate human subject research (e.g., surveys, experiments) that would require an IRB approval.

You should write up your research in a 20-25 page paper formatted in APA style. I recommend that you use the free tool Zotero (zotero.org) to manage and format your citations and bibliography. You can submit your work as a Microsoft Word or a PDF file through Canvas.

Your paper should be clearly written and logically organized, with a robust theoretical grounding, relevant data, using an appropriate methodological approach. You should include a discussion of your study's ethical implications, its limitations, and suggested directions for future research.

Your final project submission is due on **May 10**. The submission should include:

- Your paper, in a Microsoft Word or PDF format
- Your data, or if the file is too large or sensitive, an example file showing the data structure
- Your R code, used to analyze the data and generate the results presented in your paper

Late submissions will not be graded, except in cases of documented health issues or other emergency situations.

Grade Breakdown & Scale

A and B grades in this course are reserved for outstanding work. To get a high grade, students need to participate actively in class, be thorough and careful in assignments, and demonstrate excellent understanding of the subject, research skills, critical thinking, and originality in their work. The grade breakdown is as follows:

Participation	200 points
Lab assignments	300 points
Research proposal	100 points
Design outline	100 points
Final project	300 points
Total:	1000 points

The final grade will be awarded according to the following scale:

A	900-1000 points
B+	850-899 points
B	800-849 points
C+	750-799 points
C	700-749 points
D	600-699 points
F	Below 600 points

Grade appeals

You can appeal individual assignment grades in writing up to 7 days after the grades are announced. In order to be reviewed, your appeal has to be submitted over email. Once the course grades are announced, they are final and will only be changed in case of an error in the computation of the student's score.

Accommodation

This course will accommodate any student in need of assistance. Students with documented disabilities who need accommodations should contact the Rutgers Disabilities Services Office (see ods.rutgers.edu for details). You can also speak with a SC&I adviser by visiting the Office of Student Services in the SC&I Building, Room 214 or calling them at 848-932-7500.

Please contact me with information about the requested assistance and present your Letter of Accommodation as early in the semester as possible.

Academic Integrity

You are required to complete your own assignments and exams, and always acknowledge the sources of contributions, materials, quotes, and ideas that you did not develop yourself. All written assignments for this course will go through plagiarism detection software that matches text against online sources, academic publications, and previous student submissions. You should make sure that all work submitted in this class is your own and is created without the aid of unauthorized technologies, materials, or collaborations.

The consequences of scholastic dishonesty in this class and at Rutgers University in general are very serious. Any violation will at a minimum result in no credit earned for the assignment in question. Serious violations of academic integrity may prevent students from completing the course or their academic program. For more details, consult the University's academic integrity policy. If you have questions about issues related to plagiarism or academic integrity, do not hesitate to contact me.

Use of AI Tools

I encourage you to use artificial intelligence tools such as ChatGPT, Copilot, or Gemini to brainstorm ideas, ask questions, explore explanations, and seek additional information. These tools can help you learn – but they should not be used to complete exams, analyze data, write code, or draft written assignments for you. Doing so will be considered a violation of academic integrity, similar to plagiarism or cheating, and may have serious consequences.

Always verify the accuracy and relevance of information you get from AI tools. Ask for sources, links, or evidence to support the claims they make. If you use information from AI tools in an assignment, be sure to summarize it in your own words and clearly acknowledge its origin.

Rutgers University provides access to several general-purpose AI tools at it.rutgers.edu/ai. You may also benefit from specialized academic research tools such as Elicit and Consensus. Another helpful AI-powered service, NotebookLM, can be used to store and query your notes and materials. You should have access to it through your ScarletMail account.

Additional Resources

The university offers a number of resources that you can access if needed:

- For additional tutoring, training, or **writing help**, visit the Rutgers Learning Center (online at learningcenters.rutgers.edu) and the Writing Center (writingctr.rutgers.edu).
- If you need a consultation on **research materials** and ways to find them, you can contact a Rutgers University subject specialist librarian for communication.
- The SC&I IT Services can help you with various **technological problems**. You can find them in CI 120, by phone at 848-932-5555, or by email at help@comminfo.rutgers.edu.
- If you encounter a **problem with Canvas**, you can contact the Rutgers Canvas help desk at help@oit.rutgers.edu or call them at 833-648-4357.
- Student wellness services are available to you at Rutgers. You can contact CAPS for **mental health support** at rhscaps.rutgers.edu or by phone at 848-932-7884.
- The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling, and advocacy for victims of **sexual and relationship violence**. You can reach VPVA at vpva.rutgers.edu and 848-932-1181.
- The Office of Disability Services can be reached for help with accommodation and facilities for **students with disabilities** at ods.rutgers.edu, or by phone at 848-202-3111.

Course summary

Week	Dates	Topic	Assignment
1	**Jan 22 (Thu)**	Introduction, course overview	
2	**Jan 29 (Thu)**	What is computational social science?	
3	**Feb 5 (Thu)**	Surveys in a digital age	
4	**Feb 12 (Thu)**	Digital trace data I: APIs	**Lab 1 due**
5	**Feb 19 (Thu)**	Digital trace data II: Web scraping	
6	**Feb 26 (Thu)**	Networks I: Network basics	**Lab 2 due**
7	**Mar 5 (Thu)**	Networks II: Ties & groups	
8	**Mar 12 (Thu)**	Networks III: Structure & behavior	**Lab 3 due**
	Mar 19 (Thu)	***Spring break***	
9	**Mar 26 (Thu)**	Data visualization	**Lab 4 due**
10	**Apr 2 (Thu)**	Text analysis I	
	Apr 5 (Sun)	**Assignment deadline**	**Research proposal due**
11	**Apr 9 (Thu)**	Text analysis II	**Lab 5 due**
12	**Apr 16 (Thu)**	Artificial intelligence I	**Lab 6 due**
13	**Apr 23 (Thu)**	Artificial intelligence II	
	Apr 26 (Sun)	**Assignment deadline**	**Design outline due**
14	**Apr 30 (Thu)**	Machine learning	
15	**May 7 (Thu)**	Online experiments	
	May 10 (Sun)	**Assignment deadline**	**Final paper due**

Course Outline

The course schedule is subject to change: materials may be added or replaced during the semester. If that happens, the changes will be reflected on Canvas and announced in class/over email.

Week 1 – January 22

Introductions, course overview

Read the course syllabus.

Week 2 – January 29

What is computational social science?

Lazer, D., & Ognyanova, K. (2024). The future of computational social science. In J. M. Box-Steffensmeier, D. P. Christenson, & V. Sinclair-Chapman (Eds.), *Oxford Handbook of Engaged Methodological Pluralism in Political Science* (pp. 1–22). Oxford University Press.

van Atteveldt, W., & Peng, T.-Q. (2018). When Communication Meets Computation: Opportunities, Challenges, and Pitfalls in Computational Communication Science. *Communication Methods and Measures*, *12*(2–3), 81–92.

Salganik, M. J. (2017). *Bit by Bit: Social Research in the Digital Age*. Princeton, NJ: Princeton University Press. Ch.2 Observing behavior

Adler, J. (2010). *R in a Nutshell*. O'Reilly Media, Inc. Ch.3,5,6,7

Week 3 – February 5

Surveys in a digital age

Salganik, M. J. (2017). *Bit by Bit: Social Research in the Digital Age*. Princeton, NJ: Princeton University Press. Ch.3 Asking questions

Couper, M. P. (2017). New Developments in Survey Data Collection. *Annual Review of Sociology*, *43*(1), 121–145.

Kennedy, C., Popky, D., & Keeter, S. (2023). *How Public Polling Has Changed in the 21st Century*. Pew Research Center.

Stier, S., Breuer, J., Siegers, P., & Thorson, K. (2020). Integrating Survey Data and Digital Trace Data: Key Issues in Developing an Emerging Field. *Social Science Computer Review*, *38*(5), 503–516.

Survey Data Analysis with R: https://stats.idre.ucla.edu/r/seminars/survey-data-analysis-with-r

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Week 4 – February 12

Digital trace data I

Lazer, D., Hargittai, E., Freelon, D., Gonzalez-Bailon, S., Munger, K., Ognyanova, K., & Radford, J. (2021). Meaningful measures of human society in the twenty-first century. *Nature*, *595*(7866), 189–196.

Ohme, J., Araujo, T., Boeschoten, L., Freelon, D., Ram, N., Reeves, B. B., & Robinson, T. N. (2024). Digital Trace Data Collection for Social Media Effects Research: APIs, Data Donation, and (Screen) Tracking. *Communication Methods and Measures*, *18*(2), 124-141.

Davidson, B. I., Wischerath, D., Racek, D., Parry, D. A., Godwin, E., Hinds, J., van der Linden, D., Roscoe, J. F., Ayravainen, L., & Cork, A. G. (2023). Platform-controlled social media APIs threaten open science. *Nature Human Behaviour*, *7*(12), 2054–2057.

Barbera, P., & Steinert-Threlkeld, Z. C. (2020). How to Use Social Media Data for Political Science Research. In L. Curini & R. Franzese, T*he SAGE Handbook of Research Methods in Political Science and International Relations* (pp. 404–423). SAGE Publications.

Hargittai, E. (2020). Potential Biases in Big Data: Omitted Voices on Social Media. *Social Science Computer Review*, *38*(1), 10–24.

Week 5 – February 19

Digital trace data II

Ulloa, R., Mangold, F., Schmidt, F., Gilsbach, J., & Stier, S. (2025). Beyond time delays: How web scraping distorts measures of online news consumption. Communication Methods and Measures, *19*(3), 179–200.

Kim, J. W., Guess, A., Nyhan, B., & Reifler, J. (2021). The Distorting Prism of Social Media: How Self-Selection and Exposure to Incivility Fuel Online Comment Toxicity. *Journal of Communication*, *71*(6), 922–946

Heseltine, M., Barnehl, H., & Wojcieszak, M. (2025). Partisan temporal selective news avoidance: Evidence from online trace data. *American Journal of Political Science*, *69*(4), 1541–1558.

Vraga, E. K., Bode, L., Smithson, A.-B., & Troller-Renfree, S. (2019). Accidentally Attentive: Comparing visual, close-ended, and open-ended measures of attention on social media. *Computers in Human Behavior*, 99, 235–244.

Brown, M. A., Gruen, A., Maldoff, G., Messing, S., Sanderson, Z., & Zimmer, M. (2025). Web scraping for research: Legal, ethical, institutional, and scientific considerations. *Big Data & Society*, *12*(4), 1-17.

Week 6 – February 26

Networks I: Network basics

Green, H. D., & Wasserman, S. (2015). Network Analysis: A Definitional Guide to Important Concepts. *Network Analysis*, 35.

Himelboim, I. (2017). Social Network Analysis (Social Media). In The International Encyclopedia of Communication Research Methods (pp. 1–15). American Cancer Society.

Miller, P. R., Bobkowski, P. S., Maliniak, D., & Rapoport, R. B. (2015). Talking Politics on Facebook: Network Centrality and Political Discussion Practices in Social Media. *Political Research Quarterly*, *68*(2), 377–391.

Patty, J. W., & Penn, E. M. (2015). Analyzing Big Data: Social Choice and Measurement. *PS: Political Science & Politics*, *48*(01), 95–101.

Wasserman, S., & Faust, K. (1994). Ch.5 Centrality and Prestige. In *Structural Analysis in the Social Sciences*: *Vol. 8*. *Social Network Analysis: Methods and Applications*. Cambridge University Press.

Week 7 – March 5

Networks II: Ties and groups

Kitts, J. A., & Quintane, E. (2019). Rethinking Social Networks in the Era of Computational Social Science. *Oxford Handbook of Social Networks.*, 29.

Rivera, M. T., Soderstrom, S. B., & Uzzi, B. (2010). Dynamics of Dyads in Social Networks: Assortative, Relational, and Proximity Mechanisms. *Annual Review of Sociology*, *36*(1), 91–115.

Wasserman, S., & Faust, K. (1994). Ch.6 Structural Balance and Transitivity. In *Structural Analysis in the Social Sciences*: *Vol. 8*. *Social Network Analysis: Methods and Applications*. Cambridge University Press.

Valente, T. W. (2010). Ch.6 Groups. In *Social Networks and Health: Models, Methods, and Applications*. Oxford University Press.

Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2013). *Analyzing Social Networks*. SAGE Publications. Ch. 8 Testing hypotheses

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Week 8 – March 12

Networks III: Structure and behavior

Centola, D. (2019). The Truth About Behavioral Change. *MIT Sloan Management Review*, Winter Issue.

Mai, B., Liu, J., & Gonzalez-Bailon, S. (2015). Network Effects in the Academic Market: Mechanisms for Hiring and Placing PhDs in Communication (2007-2014): Hiring and Placement in Communication. *Journal of Communication*, *65*(3), 558–583.

Lusher, D., Koskinen, J., & Robins, G. (Eds.). (2012). *Exponential Random Graph Models for Social Networks: Theory, Methods, and Applications*. Cambridge: Cambridge University Press. Ch. 2, 3, 4, 5.

Week 9 – March 26

Data visualization

Healy, K. (2018). Ch.1 Look at Data. In *Data Visualization: A Practical Introduction*. Princeton, NJ: Princeton University Press.

Fox, P., & Hendler, J. (2011). Changing the Equation on Scientific Data Visualization. *Science*, *331*(6018), 705–708.

Wihbey, J., Jackson, S., Cruz, P., & Foucault Welles, B. (2020). Ch.22 Visualizing diversity: Data deficiencies and semiotic strategies. In M. Engebretsen & H. Kennedy (Eds.), *Data Visualization in Society*. Amsterdam University Press.

Pfeffer, J. (2017). Visualization of Political Networks. In *The Oxford Handbook of Political Networks*. New York, NY: Oxford University Press

Wickham, H., & Grolemund, G. (2017). *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. O'Reilly Media. Ch.1 Data Visualization

Optional: Wickham, H. (2020). Ggplot2: Elegant Graphics for Data Analysis. 3rd Ed. Springer.

Week 10 – April 2

Text I: NLP and Sentiment

Feuerriegel, S., Maarouf, A., Bär, D., Geissler, D., Schweisthal, J., Pröllochs, N., Robertson, C. E., Rathje, S., Hartmann, J., Mohammad, S. M., Netzer, O., Siegel, A. A., Plank, B., & Van Bavel, J. J. (2025). Using natural language processing to analyse text data in behavioural science. *Nature Reviews Psychology*, 4(2), 96–111.

Benoit, K. (2020). Text as Data: An Overview. In L. Curini & R. Franzese (Eds.), *The SAGE Handbook of Research Methods in Political Science and International Relations*. SAGE Publications.

Curini, L., & Fahey, R. A. (2020). Sentiment Analysis and Social Media. In L. Curini & R. Franzese (Eds.), *The SAGE Handbook of Research Methods in Political Science and International Relations*. SAGE Publications.

Hur, J. K., Heffner, J., Feng, G. W., Joormann, J., & Rutledge, R. B. (2024). Language sentiment predicts changes in depressive symptoms. *Proceedings of the National Academy of Sciences*, 121(39), 1-10.

Silge, J., & Robinson, D. (2017). *Text Mining with R: A Tidy Approach*. O'Reilly Media. Chapter 1,2

Deadline: April 5

Research proposal due

Week 11 – April 9

Text II: Topic models

Arnold, T. (2015). Humanities Data in R: Exploring Networks, Geospatial Data, Images, and Text. *Springer Media*. Ch.10 Text analysis

Chen, Y., Peng, Z., Kim, S.-H., & Choi, C. W. (2023). What We Can Do and Cannot Do with Topic Modeling: A Systematic Review. *Communication Methods and Measures*, *17*(2), 111–130.

Lei, H., & Wang, S. (2024). COVID-19 Research in Communication Journals: A Structural Topic Modeling-Assisted Bibliometric Analysis. *Health Communication*, 39(8), 1638–1650.

Weston, S. J., Shryock, I., Light, R., & Fisher, P. A. (2023). Selecting the Number and Labels of Topics in Topic Modeling: A Tutorial. *Advances in Methods and Practices in Psychological Science*, 6(2), 1-13.

Silge, J., & Robinson, D. (2017). *Text Mining with R: A Tidy Approach*. O'Reilly. Chapter 6

Week 12 – April 16

Artificial Intelligence I

Ziems, C., Held, W., Shaikh, O., Chen, J., Zhang, Z., & Yang, D. (2024). Can Large Language Models Transform Computational Social Science? *Computational Linguistics*, *50*(1).

Abdurahman, S., Salkhordeh Ziabari, A., Moore, A. K., Bartels, D. M., & Dehghani, M. (2025). A Primer for Evaluating Large Language Models in Social-Science Research. *Advances in Methods and Practices in Psychological Science*, *8*(2).

Laurer, M., van Atteveldt, W., Casas, A., & Welbers, K. (2025). On Measurement Validity and Language Models: Increasing Validity and Decreasing Bias with Instructions. *Communication Methods and Measures*, 19(1), 46–62.

Halterman, A., & Keith, K. A. (2025). Codebook LLMs: Evaluating LLMs as Measurement Tools for Political Science Concepts. *Political Analysis*, 1–17.

Weidmann, N. B., Faulborn, M., & García, D. (2026). Large Language Models Are Democracy Coders with Attitudes. *PS: Political Science & Politics*, 59(1), 17–23.

Week 13 – April 23

Artificial Intelligence II

Argyle, L. P., Busby, E. C., Fulda, N., Gubler, J. R., Rytting, C., & Wingate, D. (2023). Out of One, Many: Using Language Models to Simulate Human Samples. *Political Analysis*, 31(3), 337–351.

Lin, Z. (2025). Six Fallacies in Substituting Large Language Models for Human Participants. *Advances in Methods and Practices in Psychological Science.*

Hofmann, V., Kalluri, P. R., Jurafsky, D., & King, S. (2024). AI generates covertly racist decisions about people based on their dialect. *Nature*, 633(8028), 147–154.

Wang, Y., Zhao, J., Ones, D. S., He, L., & Xu, X. (2025). Evaluating the ability of large language models to emulate personality. *Scientific Reports*, 15(1), 519.

Hackenburg, K., Tappin, B. M., Hewitt, L., Saunders, E., Black, S., Lin, H., Fist, C., Margetts, H., Rand, D. G., & Summerfield, C. (2025). The levers of political persuasion with conversational artificial intelligence. *Science*, 390(6777).

Deadline: April 26

Design outline due

Week 14 – April 30

Machine Learning

Alpaydin, E. (2021). *Machine Learning, Revised and updated edition*. The MIT Press. Chapter 2

Grimmer, J., Roberts, M. E., & Stewart, B. M. (2021). Machine Learning for Social Science: An Agnostic Approach. *Annual Review of Political Science*, 24(1), 395–419.

Burger, S. V. (2018). *Introduction to Machine Learning with R*. O'Reilly Media. Chapter 1 & 2

Barberá, P., Boydstun, A. E., Linn, S., McMahon, R., & Nagler, J. (2021). Automated Text Classification of News Articles: A Practical Guide. *Political Analysis*, 29(1), 19–42.

Optional: Metaxa, D., Park, J. S., & Robertson, R. E. (2021). *Auditing Algorithms: Understanding Algorithmic Systems from the Outside In*. Now Publisher

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Week 15 – May 7

Ethics and open science

Salganik, M. J. (2017). *Bit by Bit: Social Research in the Digital Age*. Princeton, NJ: Princeton University Press. Ch. 6 Ethics

Crowcroft, J., Haddadi, H., & Henderson, T. (2018). Responsible Research on Social Networks: Dilemmas and Solutions. In B. F. Welles & S. González-Bailón (Eds.), *The Oxford Handbook of Networked Communication*. Oxford University Press.

Menchen-Trevino, E. (2018). Digital Trace Data and Social Research: A Proactive Research Ethics. In B. F. Welles & S. González-Bailón (Eds.), *The Oxford Handbook of Networked Communication*. Oxford University Press.

Bowman, N. D., & Keene, J. R. (2018). A Layered Framework for Considering Open Science Practices. *Communication Research Reports*, *35*(4), 363–372.

Freese, J., & Peterson, D. (2017). Replication in Social Science. *Annual Review of Sociology*, *43*(1), 147–165.
