

POLSCI XXX: QUANTITATIVE ANALYSIS OF DIGITAL CONFLICT

Fall 2020 Syllabus

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<b>Instructor:</b> Nadiya Kostyuk	<b>Office:</b>
<b>Instructor's Office Hours:</b>	<b>E-mail:</b> nadiya@umich.edu
<b>Classroom:</b>	<b>Meeting Times:</b>

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**Course description:** This course examines the statistical issues relevant to the empirical study of the effect of technological advancement and innovation on conflict. The purpose of this course is to equip students with a diverse toolkit that can be used to conduct research on digital conflict studies. To that end, it briefly covers the following methods: time-series analysis, network and text analysis, causal inference, war games, and formal models. Each section consists of two parts: a brief introduction to a specific empirical method followed by a review of 2 or 3 publications or working papers that apply this method. In reviewing recent publications, we will aim to critically evaluate each study's main assumption, the appropriateness of its models, and the interpretation of its main results.

**Objectives:** The key objectives of this course are to:

- expose students to contemporary quantitative applications in international relations (IR);
- improve students' ability to critically evaluate quantitative IR work and design empirical research projects of their own;
- equip students with empirical knowledge and tools to conduct research on the topic of digital conflict studies.

**Prerequisites:** Students are expected to have a rudimentary background in statistics and experience with statistical computing (e.g., R, SPSS, STATA, Python). Students without this background must obtain the instructor's permission prior to enrolling in the course.

### Grading and Assignments

Grades will be based on weekly attendance and participation (20%), a mock journal review (10%), a code-replication presentation (10%), peer-review comments (10%), and a co-authored replication paper (50%).

- (1) **Classroom participation** (20%). Students are expected to engage fully the readings and to actively participate in all discussions and debates. To achieve a high participation grade, students should contribute to in-class discussions through active listening and by advancing the conversation and providing constructive feedback (e.g., on in-class presentations) when prompted to do so.
- (2) **Journal review** (10%). Students are required to write a mock article review of one of the empirical works assigned in the syllabus. The review should be written as if for a peer-reviewed journal. The purpose of this exercise is to teach students how to evaluate the merits of scholarly works and to communicate constructive feedback to the journal editors and authors. The review is **due before the beginning of the class meeting during which we will discuss the work in question**.
- (3) **Code-replication presentation** (10%). Students are required to prepare a 15- to 20-minute presentation that walks their peers through the replication code of one of the empirical works assigned in the syllabus. Students are expected to address both empirical and technical difficulties that might arise using this methodological approach. The purpose of this exercise is to teach students how to apply open-source replication materials to execute their own research agendas. The presentation is **due before the beginning of the class meeting during which we will discuss the work in question**.
- (4) **Peer review comments** (10%). Students must prepare a 500- to 600-word memo that provides constructive feedback on a co-authored replication paper (see below) submitted by their peers. For this assignment, students will be grouped based on their research interests. The memos are **due before the beginning of the Week 8 class meeting**. During the peer-review session, pairs of students will have a chance to discuss their comments in detail. Please keep in mind that feedback should be constructive in nature, designed to improve, rather than tear down, the research proposal.
- (5) **Co-authored replication paper** (50%). The final paper is a 25- to 30-page replication of an existing piece of scholarship and should constitute a publishable article. The process will follow these steps:
  - (a) Students will choose co-authors and an article that they would like to replicate and write me a short memo that explains their choice of article. The memo is due **during Week 4**.

- (b) Students will replicate their chosen study and prepare an outline that explains potential ways they plan to extend the study. Students will discuss this outline during the peer review session **during Week 8**.
- (c) Having incorporated feedback from their peers, students will present their papers **during Weeks 12 and 13**.
- (d) The final version of the research paper is due at **11:59pm on December 15, 2020**.

**Late assignment submissions:** Grades will be reduced by one-letter grade per day that an assignment is late; alternative arrangements will be made only for excused absences, such as for medical and family emergencies.

**Grading and grade-grievance policy:** Good grades will be awarded for work that is completed fully, rigorously, and insightfully. I will strive to provide constructive feedback on assignments. Any grievances must be submitted in writing after a 48-hour waiting and review period.

**Literature in assignments:**

- Due to the topic's novelty, much of the cutting-edge research has not yet been officially published in academic outlets. Students should feel free to use a variety of sources — e.g., academic articles, books, working papers, news sources, and reports by NGOs, governments, and think tanks. Regardless of the source, students are responsible for critically evaluating the content they cite.
- To improve the rigor of their analyses, I expect students to cite underrepresented voices, paying attention to the gender and geographic balance of their citations.

### Course Policies

**Student Mental Health and Well-Being:** University of Michigan is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and <https://caps.umich.edu/> during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at (734) 764-8320 and <https://www.uhs.umich.edu/mentalhealthsvcs>, or for alcohol or drug concerns, see <https://www.uhs.umich.edu/aodresources>. For a listing of other mental health resources available on and off campus, visit: <http://umich.edu/mhealth/>.

**Learning needs:** All students with special needs requiring accommodations should present the appropriate paperwork from the Service for Students with Disabilities. For more information, see <https://ssd.umich.edu/>. It is the student's responsibility to present this paperwork in a timely fashion and follow up with the instructor about the accommodations being offered.

**Discrimination & Harassment:** "The University of Michigan has, as one of its core values, an abiding commitment to sustaining a community in which the dignity of every individual is respected. Key to this value are efforts to foster and nurture an environment of civility and mutual respect by preventing discrimination and harassment on our campus." For a list of prohibited forms of discrimination and harassment, as well as resources about where to get help, please see <http://www.hr.umich.edu/oie/cc/about.html>.

**Religious Holidays:** Those students who observe a university-recognized religious holiday on a section day should contact me within the **first two weeks** in order to receive an excused absence.

**Attendance:** Regular attendance is expected, as is full engagement in classwork activities. Please arrive on time, turn off your cell phone, and stay for the entire class period.

**Classroom Courtesy:** Our goal is to become attentive listeners as well as critical thinkers and eloquent speakers. It is perfectly acceptable to disagree with other students, but all responses should be directed toward the content of their ideas rather than at their individual identities. Moreover, remember that private conversations or disrespectful comments hinder your learning and the learning of others.

**Academic Dishonesty, Cheating, and Plagiarism:** Academic dishonesty, cheating, and plagiarism of any kind are unacceptable. There are no exceptions. Instructors will follow University of Michigan procedures when there is sufficient evidence of plagiarism. For details, see <http://www.lib.umich.edu/academicintegrity/understanding-plagiarism-and-academic-integrity>.

**Writing Help:** This course requires basic academic writing skills. If you need help with your writing at any point, or if English is not your first language and you feel that you need additional support, I recommend contacting the Sweetland Writing Center (1139 Angell Hall, 764-0429, <http://www.lsa.umich.edu/sweetland/>).

### General Readings

There are no general required readings. All class-specific readings will be uploaded to Canvas prior to the semester's start.

### Section Overview

Section	Section Date	Section Title
1	09/08/2020	Introduction, quantitative analysis of digital conflict studies
2	09/15/2020	Temporal dependence
3	09/22/2020	Spatial dependence
4	09/29/2020	Panel data <b>Memo due</b>
5	10/06/2020	Network analysis
6	10/14/2020	Text analysis
7	10/20/2020	War games
8	10/27/2020	Peer review session <b>Peer review comments due</b>
9	11/03/2020	Causal inference 1: Survey experiments
10	11/10/2020	Causal inference 2: Instrumental variables
11	11/17/2020	Formal models
12	11/23/2020	<b>Student Presentations 1</b>
13	11/30/2020	<b>Student Presentations 2</b>
14	12/06/2020	Reflections. Future of digital conflict studies <b>Research paper due at 11:59 pm on December 15, 2020</b>

### Detailed Course Schedule

#### Week 1. Introduction, quantitative analysis of digital conflict studies

- King, G. 2006. "Publication, publication." *PS: Political Science & Politics* 39 (1): 119-125.
- Schrodtt, P. 2013. "Seven Deadly Sins of Contemporary Quantitative Political Analysis." *Journal of Peace Research* 51 (2): 287-300.
- Gohdes, Anita R. 2018. "Studying the Internet and Violent Conflict," *Conflict Management and Peace Science*, 35(1): 89-106.
- Unver, H. Akin. "Internet, Social Media and Conflict Studies: Can greater interdisciplinarity solve the analytical deadlocks in cybersecurity research?." *arXiv preprint arXiv:1905.01777* (2019).

#### Week 2. Temporal dependence

- Beck, Nathaniel, Jonathan N. Katz and Richard Tucker. "Taking Time Seriously: Time-series-cross-section analysis with a binary dependent variable." *American Journal of Political Science* 42.4 (1998): 1260-1288.
- Carter, David and Curtis Signorino. "Back to the Future: Modeling time dependence in binary data." *Political Analysis* 18.3 (2010): 271-292.
- Weidmann, Nils B., and Espen Geelmuyden Rød. *The Internet and Political Protest in Autocracies*. Oxford Studies in Digital Politics, 2019. Chapter 7.
- Kostyuk, Nadiya and Yuri M. Zhukov. 2019 "Invisible Digital Front: Can cyber attacks shape battlefield events?" *Journal of Conflict Resolution* 63 (2): 317-347
- Zeitzoff, Thomas. "Does Social Media Influence Conflict? Evidence from the 2012 Gaza Conflict," *Journal of Conflict Resolution* 62.1 (2018): 2963.

#### Week 3. Spatial dependence

- Beck, Nathaniel, Kristian Skrede Gleditsch, and Kyle Beardsley. "Space is More than Geography: Using spatial econometrics in the study of political economy." *International Studies Quarterly* 50.1 (2006): 27-44.
- Crabtree, Charles, et al. "A Spatial Analysis of the Impact of West German Television on Protest Mobilization during the East German Revolution." *Journal of Peace Research* 52.3 (2015): 269-284.
- Weidmann, Nils B., and Espen Geelmuyden Rød. *The Internet and Political Protest in Autocracies*. Oxford Studies in Digital Politics, 2019. Chapter 8.
- Warren, T. Camber. "Explosive Connections?: Mass media, social media, and the geography of collective violence in African states." *Journal of Peace Research* 52.3 (2015): 297-311.

**Week 4. Panel data**

- Weidmann, Nils B., and Ward, M. D. “Predicting Conflict in Space and Time.” *Journal of Conflict Resolution*, 54.6 (2010): 883-901.
- Bailard, Catie Snow. “Ethnic Conflict Goes Mobile: Mobile technology’s effect on the opportunities and motivations for violent collective action.” *Journal of Peace Research* 52.3 (2015): 323-337.
- Croicu, Mihai and Joakim Kreutz. “Communication Technology and Reports on Political Violence: Cross-national evidence using African events data,” *Political Research Quarterly* 70.1 (2017): 1931.

**Week 5. Network analysis**

- Hafner-Burton, E., Kahler, M. and Montgomery, A. “Network Analysis for International Relations.” *International Organization* 63 (2009): 559-92.
- Steinert-Threlkeld, Zachary C. “Spontaneous Collective Action: Peripheral mobilization during the Arab Spring.” *American Political Science Review* 111.2 (2017): 379403.
- Barberá, Pablo, et.al. “The Critical Periphery in the Growth of Social Protests.” *PLOS ONE* 10.11 (2015): e0143611.
- Duvanova, Dinissa et al. “Violent Conflict and Online Segregation: An analysis of social network communication across Ukraine’s regions.” *Journal of Comparative Economics* 44.1 (2016): 163-81.

**Week 6. Text analysis**

- Benoit, Kenneth, et al. “Crowd-Sourced Text Analysis: Reproducible and agile production of political data.” *American Political Science Review* 110.2 (2016): 278-295.
- Grimmer, Justin, and Brandon M. Stewart. “Text as Data: The promise and pitfalls of automatic content analysis methods for political texts.” *Political Analysis* 21.3 (2013): 267-297.
- Karuna, Prakruthi, et al. “On the Dynamics of Local to Global Campaigns for Curbing Gender-based Violence.” *arXiv preprint arXiv:1608.01648* (2016).
- Mitts, Tamar. “From Isolation to Radicalization: Anti-Muslim hostility and support for ISIS in the West.” *American Political Science Review* 113.1 (2019): 173-194.
- Lutscher, Philipp. “Hot Topics: Cyberattacks on news websites in competitive autocracies.” *Working paper* (2019).

**Week 7. War games**

- Van Creveld, Martin. *Wargames: From gladiators to gigabytes*. Cambridge University Press, 2013. Chapters 5-6.
- Bracken, Paul, and Martin Shubik. “War Gaming in the Information Age: Theory and purpose.” *Naval War College Review* 54.2 (2001): 47-60.
- Schneider, Jacquelyn. “Cyber and Crisis Escalation: Insights from wargaming.” U.S. Naval War College. *Working paper* (2018).
- Jensen, Benjamin, and Brandon Valeriano. “Cyber Escalation Dynamics: Results from war game experiments.” *International Studies Association, Annual Meeting Panel: War Gaming and Simulations in International Conflict* March 27, 2019. *Working paper* (2019).

**Week 8. Peer review session****Week 9. Causal inference 1: Survey experiments**

- Druckman, James N., Donald P. Green, James H. Kuklinski, and Arthur Lupia. “The Growth and Development of Experimental Research in Political Science.” *American Political Science Review* 100.4 (2006): 627-635.
- Druckman, James N., Donald P. Green, James H. Kuklinski, and Arthur Lupia, A. *Cambridge Handbook of Experimental Political Science*. Cambridge University Press (2011). Chapters 1-2, 8.
- Kostyuk, Nadiya and Carly Wayne. “Communicating Cyber-security: Citizen risk perception of cyber-threats.” *Working paper* (2019).
- Kreps, Sarah E., and Jacquelyn Schneider. “Escalation Firebreaks in the Cyber, Conventional, and Nuclear Domains: Moving beyond effects-based logics.” *Working paper* (2018).

**Week 10. Causal inference 2: Instrumental variables**

- Sovey, Allison J., and Donald P. Green. “Instrumental Variables Estimation in Political Science: A readers’ guide.” *American Journal of Political Science* 55.1 (2011): 188-200.
- Pierskalla, Jan H. and Florian M. Hollenbach. “Technology and Collective Action: The effect of cell phone coverage on political violence in Africa,” *American Political Science Review* 107.2 (2013): 207-24.
- Weidmann, Nils B. “A Closer Look at Reporting Bias in Conflict Event Data,” *American Journal of Political Science* 60.1 (2016): 206-18.

**Week 11. Formal models**

- Axelrod, Robert and Rumen Iliev. “The Timing of Cyber Conflict,” *Proceedings of the National Academy of Sciences* 111.4 (2014): 1298-1303.
- Kostyuk, Nadiya. “Cyber Institutions and Sub-optimal Logic of Cyber Deterrence.” *Working Paper*.
- Little, Andrew T. “Communication Technology and Protest,” *The Journal of Politics* 78.1 (2015): 15266.
- Dragu, Tiberiu and Yonatan Lupu. “Does Technology Undermine Authoritarian Governments?”. *Working paper* (2018).

**Week 11. Student presentations 1****Week 12. Student presentations 2****Week 13. Reflections: Future of digital conflict studies**

- Monroe, Burt L., et al. “No! Formal theory, causal inference, and big data are not contradictory trends in political science.” *PS: Political Science & Politics* 48.1 (2015): 71-74.
- Zeitzoff, Thomas. “How Social Media is Changing Conflict,” *Journal of Conflict Resolution* 61.9 (2017): 1970-91.
- Tucker, Joshua, Et. Al. *Social Media, Political Polarization, and Political Disinformation: A review of the scientific literature*. Hewlett Foundation report (2018).