Using Data for Justice

[PSY1019]

INSTRUCTOR AND COURSE INFORMATION

Instructor:

Timothy J. Valshtein, PhD [he, him, his]

Office: William James Hall, Room 844

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Office Hours: Wednesday 12:30 – 1:30pm and by appointment

Teaching Fellow:

Missing Person, [zee, zee, zee]

Office: William James Hall, for now

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Office Hours: XX xx:xx – xx:xx and by appointment

Lecture:

Tuesdays & Thursdays
12:00 – 1:15pm
Robinson Hall, Room 106

Lab Sections:

N/A, xx:xx – xx:xx

Course website:

https://canvas.harvard.edu/courses/106092

ABOUT THIS COURSE

Course Description

In this course we will talk about how to effectively wield quantitative data to develop a more pluralistic understanding of the human experience, and to facilitate action towards a just society. We will unpack the historical context for how the field of statistics has been used for injustice (and its ties to eugenicist thinking), as well as contemporary issues data science faces now (developing responsible machine learning algorithms). We will dive into conversations about the power afforded to those who collect and govern our data, the affordances of analyzing data as nested within time and context, and the ways researchers can work for and with the communities they study. Ultimately, this course seeks to familiarize students with potential remedies to ethical data dilemmas, and to sharpen students' ability to critically engage with quantitative data.

Course Overview and Learning Objectives

Big data methods are increasingly prevalent in psychology and adjacent social scientific disciplines (Qiu, Chan, & Chan, 2018). Despite the proliferation of these methods, ethical challenges have been raised by scholars at the nexus of several disciplines suggesting we pay closer attention to the ways in which data can be used for (in)justice so we can work collectively towards a more just world. **This course will unfold in three parts, loosely following from Green's (2021) framework for a politically-oriented data science:**

Part A: Interest and Reflection [Weeks 0 - 4]

We will focus on identifying social issues in the datafied world.

We will examine historical and sociopolitical factors underlying issues.

We will identify contemporary frameworks offering solutions.

Part B: Application [Weeks 5 – 11]

We will develop and elaborate a toolkit of methods well-suited to address these issues.

We will consider how to implement these solutions and ensure accuracy.

Part C: Visions of the Future [Weeks 12 – 14]

We will conclude with a broader discussion of how to orient our methods and approach towards a politics of social justice.

By the end of this course students should be able to:

1. Identify underlying assumptions of quantitative methods and data science tools
2. Summarize strengths and weaknesses of quantitative methods in the social sciences
3. Unpack how racial, gender, socioeconomic, and other injustices manifest in data
4. Articulate social critiques in technical discussions
5. Recognize how data can be used in the pursuit of justice as well as in the perpetration/perpetuation of injustice
6. Recognize sites of individual and collective life where justice is at stake in relation to data, both explicit and implicitly
7. Integrate competencies across key disciplines including data science, forensic science, ethics, psychology, sociology, and more
8. Classify avenues for the pursuit of justice in a datafied world
9. Wield a toolkit for effectively conducting critical quantitative analyses
10. Construct informed positions about how quantitative methods can be used to address social issues

COURSE READINGS

There is **no required** textbook for this course. All articles are available for download on Canvas. *Before* each meeting you will be responsible for completing all assigned readings, which will serve as the basis for our weekly meetings. See the weekly course schedule below for a detailed reading list. Supplementary resources are not required readings and can be found on Canvas.

Some related, supplementary readings you might be interested in checking out:

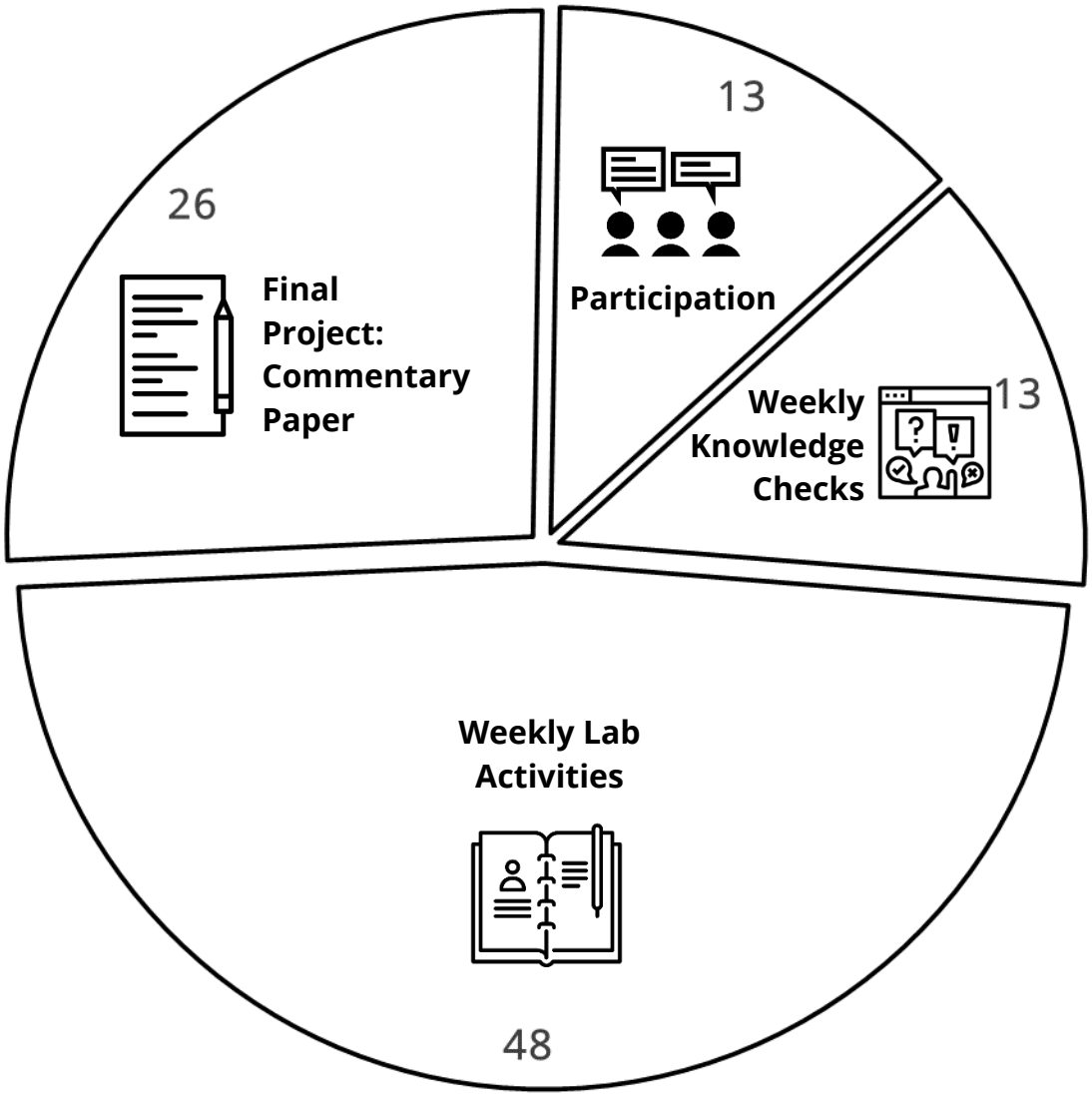
- APA Publication Manual (7th edition) and Purdue Owl, the free APA-style resource
  - Benjamin, R. (2019). Race after technology: Abolitionist tools for the new jim code. *Social forces*.
  - D'ignazio, C., & Klein, L. F. (2020). *Data feminism*. MIT press.
  - Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.
  - Longino, H. E. (2020). Science as social knowledge. In *Science as Social Knowledge*. Princeton university press.
  - O'Neill, C. (2016). Weapons of math destruction. *How Big Data Increases Inequality and Threatens Democracy*, *10*, 3002861.
  - Press, S. J., & Tanur, J. M. (2012). *The subjectivity of scientists and the Bayesian approach*. John Wiley & Sons.
  - Zuberi, T., & Bonilla-Silva, E. (Eds.). (2008). *White logic, white methods: Racism and methodology*. Rowman & Littlefield Publishers.
  - Walter, M., & Andersen, C. (2016). *Indigenous statistics: A quantitative research methodology*. Routledge.

Week			Lecture Topic	Readings	Activities	Value	Due
			PART A: Interest and Reflection				
0	Optional		Introduction to Data Politics	*Optional:* Green, 2021; Jones-Rooy, 2019	Explore course materials	-	
1	**Th**	9/1	Big Data, Big Questions	boyd & Crawford, 2012; Taylor, 2017	A Conversation about Data	4	9/4
2	**Tu**	9/6	This Problem Goes Way Back	Clayton et al., 2020	Positionality Statements	4	9/11
	Th	9/8	Values and Ideology Embedded in Science	Abo-Zena et al., 2022; Longino, 1990 (Ch5)			
3	**Tu**	9/13	Locating Injustice across Domains	Ackermann et al., 2022	Identifying Sites of Data Injustice	4	9/18
	Th	9/15	Locating Injustice across the Data Lifecycle	AISP Toolkit: Centering Racial Equity (p.1-33)			
4	**Tu**	9/20	Data Responsibly	Stoyanovich et al., 2017; Zook et al., 2017	Debating Big Data	6	9/25
	Th	9/22	Inquiring Critically	Gillborn et al., 2018; Stage, 2007			
			PART B: Application				
5	**Tu**	9/27	Can We Even Measure the Mind?	Schoenherr & Hamstra, 2016; McGrane, 2015	Developing a Measurement Instrument	4	10/2
	Th	9/29	Better Measurement	Flake & Fried, 2020; Maul, 2017			
6	**Tu**	10/4	The Who and the How (Many) of Big Data	Hruschka et al., 2018; Msaouel, 2022	Download Your Own Data	6	10/9
	Th	10/6	The Other "How" of Big Data: Ethics	Sagalnik, 2017 (Ch6)			
7	**Tu**	10/11	Causality is Actually Complicated	Holland, 2008; Jasperse et al., 2022; Mitchell & Tetlock, 2022; Syed, 2021	Final Project Paper Topic Workshop	3	10/16
	Th	10/13	Inference Beyond Random Assignment	Grosz et al., 2020; Hanel et al., 2019			

Week			Lecture Topic	Readings	Activities	Value	Due
8	Tu	10/18	Using Bayes to Make the Right Call	Pearl & Mackenzie, 2018 (Ch 3); Wagenmakers et al., 2016	Exploring Bayesian Inference	4	10/23
	Th	10/20	CANCELLED	N/A			
9	Tu	10/25	More than Fitting Lines to Data	Castillo & Gillborn, 2022	Fun with Multilevel Data	4	10/30
	Th	10/27	Life from Moment to Moment	Bolger & Laurenceau, 2013 (Ch1-2); DiGiovanni et al., 2021			
10	Tu	11/1	People, Embedded in Context	Cook et al., 2014; Lattaner et al., 2021	Peer Writing Workshop	3	11/6
	Th	11/3	Capturing Humans as Social Beings	Clifton & Webster, 2017; Turetsky et al., 2020			
11	Tu	11/8	The Highs of Machine Learning	O'Neil, 2016 (Ch1); Yarkoni & Westfall, 2017	Evaluating Ethics in AI	4	11/13
	Th	11/10	The Lows of Machine Learning	Angwin et al. 2016; Powles, 2018			
			PART C: Visions of the Future				
12	Tu	11/15	Going Beyond Mere Accuracy	Friedler et al., 2016; Stoyanovich et al. 2019; Stoyanovich et al., 2020	Constructing Sociohistorical Context in Research	4	11/20
	Th	11/17	History Still Matters	Bühler & Nikitin, 2020; Rivera Pichardo et al., 2022; Teo, 2015			
13			******** THANKSGIVING BREAK, NO CLASS ********		Full Project Draft (Ungraded)	-	11/23
14	Tu	11/29	Communities Have the Answers	Kia-Keating & Juang, 2022; Prince et al., 2019	Using Scientific Evidence for Good and Bad	4	12/4
	Th	12/1	Building Knowledge, Together	Benjamin, 2020 (Ch5); D'Ignazio & Klein, 2020 (Ch5); Ledgerwood et al., 2022			
15			******** FINALS WEEK ********		Final Project: Commentary Paper	20	TBD

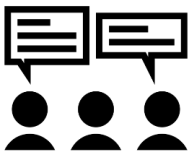
COURSE ASSESSMENT OVERVIEW

Grade Breakdown	A	A-	B+	B	B-	C+	C	C-	D+	D	E
	92.5 – 100	92.49 – 89.5	89.49 – 86.5	86.49 – 82.5	82.49 – 79.5	79.49 – 76.5	76.49 – 72.5	72.49 – 69.5	69.49 – 66.5	66.49 – 59.5	< 59.49



COURSE ASSESSMENT DETAILS

1.) PARTICIPATION [13%]

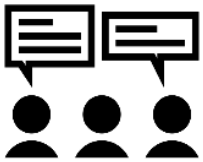


This course will feature discussion-based and hands-on lab components. Your participation is essential and without your engagement this class won't function effectively! To earn credit, all students are expected to come to lecture and/or lab having completed the readings and any work by the relevant due date. One point can be earned for each week of class, for a total of 13 points. Additional guidelines regarding expectations for effective participation are available on Canvas.

2.) WEEKLY KNOWLEDGE CHECKS [13%]

To effectively build on concepts you may have encountered previously, we will seek to establish a foundation of common knowledge about data and research. Accordingly, each week you will complete a pre-class knowledge check (a total of 13, one for each week). These checks will be a review of material you will have likely seen before, as well as new material from the current week's readings. You can use any materials from this course or related courses when completing these checks. Knowledge checks are a critical opportunity to refresh your memory and check your understanding of the week's material. They will be graded on completeness and are due each week, once weekly, by 11:00am ET on Tuesdays. See assignment tab on Canvas for more information.

3.) WEEKLY LAB ACTIVITIES [48%]



This course will feature a lab component to help bring the material to life. Each week, we will engage in a variety of hands-on discussion, activities, and other reflections. All students are expected to come to these labs having completed the readings and any other preparatory materials, as required. As can be seen in the calendar of activities, each week you will be required to complete and submit an assignment. While the particular guidelines will vary for each activity, assignments will be worth **4pts each**, except where noted. Additional information can be found on Canvas under the assignments tab.

4.) FINAL PROJECT: COMMENTARY PAPER [26%]

The final project is intended to be the culmination of everything we'll discuss throughout the semester. You will play the role of a critical, justice-oriented scholar seeking to write a "commentary" style paper, similar to the style found in a peer-reviewed journal. While you will be able to choose your own specific topic and establish your own particular style of critiquing, the goal of this assignment is to create a concise-but-incisive commentary in response to a prominent article (or articles) of your choice. The particulars will vary from project to project, but the general assignment will require you to first choose a peer-reviewed, empirical target paper (or set of related papers cohering around a specific theme) and use the concepts, frameworks, and methods we've discussed in this course to make critiques of the target paper and recommendations for future research. Critiques and solutions can span interrogations of the type of research question or literature used, approaches to sampling or participant recruitment, data acquisition strategies, methodological and analytic critiques, caveats or alternative explanations of key findings, implications of the findings, and something else. More detailed information containing guidelines for what your project should look like, as well as sample Commentary papers are available on Canvas. Effective completion of this assignment will require you to draw on course readings and your own outside review of relevant scientific evidence. To ensure this project feels manageable, this project will be broken down into several small components, as described below:

- 3% Choose Project Topic, due 10/16
- 3% Peer Collaboration "Lab Meeting" Workshop, due 11/6
- 0% Full Draft of Final Project, with simulated grade, due 11/23
- 20% Final Version, due TBD pending exam schedule

COURSE POLICIES AND EXPECTATIONS

ENROLLMENT AND PRE-REQUISITES

I plan to cap enrollment at 40 students. The Psychology Department requires completion of Science of Living Systems 20 or Psychology 1 or the equivalent of introductory psychology (e.g. Psych AP=5 or IB =7 or Psyc S-1), and PSY 1900, STAT 100/102/104 before enrolling in this course; or permission of instructor.

ATTENDANCE

Regular attendance is expected, and learning depends upon the participation and preparedness of us all. Attendance and participation in discussion are obligatory. You are expected to be in class every meeting, to show up on time, to stay for the full class period, and to be an active learner. Participation constitutes a part of your grade; students who do not attend and/or are not actively engaged will receive lower grades. However, life happens—you are also entrusted with the ability to manage your own time effectively. Should something come up, we can come up with a suitable course of action.

- **Unexcused Absences:** You may miss 1 class period without excuse, justification, or grade penalty. Two or more unexcused absences will result in a **1% reduction** of your overall course grade per day missed.
- **Excused Absences:** You will be excused from discussion for family and medical emergencies and no documentation is required. Please just let me know as soon as possible via Slack or email that you will be (or were) absent so I can direct you to the proper resources. The most important thing is to keep me informed of any absences, lateness, or early departure—anticipated or otherwise.
- **Late assignments:** Late assignments will be penalized by one point each day they are late unless you request an extension from us via Slack or email. Please send your request by the day before the due date. No documentation or explanation is necessary for an extension; all you have to do is ask! For *weekly pre-class knowledge checks*, you cannot submit late. I use these questions as the basis for our class discussions and lab activities, so once the deadline has passed, these assignments can no longer be submitted for credit.
- **Other Circumstances:** If there are other extenuating circumstances, contact me as soon as possible regarding matters impacting multiple class periods or any other unique situation that arises over the course of the semester. We are here to learn and grow together and as long as you keep me informed, we can figure it out.

COLLABORATION AND COMMUNAL LEARNING

This is a lecture-based course, but learning will also occur communally in the context of Slack and on Canvas. Sharing and exchanging class notes, discussing course materials, peer-reviewing your writing, and general exchange of ideas outside the classroom are not only allowable practices, but they are encouraged. We have a course **Slack channel** to help facilitate these discussions and additional conversation. Feel free to pose questions to your fellow students and to the instructor(s) and feel empowered to clarify each other's confusions. However, all the assignments for this course are to be completed and submitted independently, except where noted. Nevertheless, all of Harvard College's academic integrity policies (see below) are applicable here, as they are in any course.

USE OF TECHNOLOGY

- Although learning remotely has changed the way we think about technology, we should still strive to set aside technological distractions during lecture.
- Technology (e.g., tablets and computers) may only be used with permission. If it becomes distracting, I reserve the right to request that you cease using it.
- In some cases, I may ask you to bring this technology for the purpose of facilitating and enriching learning.
- A computer or other technology is required for lab section.

COMMUNICATION

I will do my best to answer emails and Slack messages within 48 hours (usually less than that) and will return papers and other assignments within a week. For planning purposes please know that emails/messages sent during the week will likely receive responses more quickly than emails/messages sent over weekends.

RESPECT

Respect is imperative for us to collectively create a nurturing classroom space.
We will be thinking deeply about challenging material. To make our learning environment safe, comfortable, and conducive for everyone, we will:

- learn each other's names and pronouns
- listen attentively to others
- avoid racist, sexist, heterosexist, classist, ableist, ageist, or other derogatory language
- create space for growth and comfort taking learning risks
- work patiently to question our own assumptions

DISCLAIMER ABOUT COURSE MATERIAL

- Our classroom provides an open space for the critical and civil exchange of ideas.
- Because much of this course focuses on various forms of injustice and how science and data are implicated in their perpetuation, we will encounter some upsetting topics (e.g., race science, eugenics, colonialism, crime, climate change, and more).
- Moreover, this course will explore how identities, ideology, values, and social structures affect and are affected by science, data, and their interplay. This means we will discuss racism, classism, misogyny, heterosexism, ableism, among others.
- Beyond these topics, there may be other material you may find potentially alarming, contentious, or harmful. I will do my best to both alert you to these topics as they arise, as well as address how/why they are contentious.
- If you need support and/or would like to talk to someone about questions or concerns relating to any of the topics we cover in this course, I encourage you to reach out to me.

ACCOMMODATIONS, ACCESSIBILITY, AND RESOURCES

ACADEMIC ACCOMMODATIONS

If you require accommodations, please contact the Harvard College Accessible Education Office, in the Smith Campus Center, Room 470, or via phone at (617) 496-8707 or via email aeo@fas.harvard.edu. Any student needing academic adjustments or accommodations is requested to present their letter from the Accessible Education Office (AEO) and speak with the instructors by the end of the second week of the term in order to assure that appropriate support and accommodations will be provided. Appropriate documentation for request of accommodations must be provided to AEO in order to be eligible for services. Failure to do so may result in the instructor's inability to respond in a timely manner. All discussions will remain confidential, although AEO may be consulted to discuss appropriate implementation.

ACADEMIC RESOURCES

The Academic Resource Center (ARC) at Harvard University offers one-on-one tutoring, peer tutoring, as well as accountability groups and hours. Academic skills workshops are also offered. The Academic Resource Center is located at 1414 Massachusetts Avenue, floor 3R. The ACR's email is academicresourcecenter@harvard.edu. Students can make email or walk in. For more information, visit: https://academicresourcecenter.harvard.edu/about

COUNSELING AND MENTAL HEALTH SERVICES

Harvard University Counseling and Mental Health Services
Located within the Smith Campus Center is a safe place for students to talk about any concerns they may have. Harvard University Counseling Center offers confidential mental health services that are provided in a safe environment where students can address issues that may be keeping them from attaining their academic goals. To schedule an appointment: login to the patient portal at https://huhs.harvard.edu/patient-portal. For more information visit: https://camhs.huhs.harvard.edu/

ACADEMIC INTEGRITY

Students are expected to adhere to the academic integrity standards of Harvard College, as well as become familiar with the Harvard College Academic Integrity and Academic Dishonesty Policy. The full statement can be found at:

https://handbook.college.harvard.edu/files/collegehandbook/files/harvard_college_student_handbook_22_-_23.pdf

1.) Plagiarism:

Plagiarism is presenting others' work without adequate acknowledgement of its source, as though it were one's own. Plagiarism is a form of fraud. We all stand on the shoulders of others, and we must give credit to the creators of the works that we incorporate into products that we call our own. Plagiarism or any other type of academic dishonesty will not be tolerated. All assignments must reflect your own (or your group's) work. Whenever you communicate an idea, you must give proper attribution. Do not hesitate to cite other researchers' work in your papers and presentations—we expect that you will do so! Keep in mind that any given research paper in the field will likely cite dozens of preceding articles (some may cite in excess of 50 or 100). These citations are vital because they enhance and lend credibility to scientific arguments.

Keep the following in mind throughout the semester:

- When including other peoples' research results, ideas, or arguments in the paper, you should put them in their own words and include a citation to the original source. Direct quotes are permissible but *should be used sparingly*. When using a direct quote, be sure to put the text in quotation marks and include a page number.
- Always cite the source of any research results, idea, or argument that is not entirely original, even if it has been significantly reworded. Changing the grammatical structure, inserting additional punctuation, and/or replacing words with synonyms

does not count. Plagiarized or improperly cited work may result in penalties and disciplinary action.
- For more information on how to cite others' work, please consult the Harvard Guide to Using Sources: http://usingsources.fas.harvard.edu/icb/icb.do

2.) Cheating: Cheating is deceiving a faculty member or other individual who assesses student performance into believing that one's mastery of a subject or discipline is greater than it is by a range of dishonest methods.

3.) Distributing: Selling class notes, test materials, or any other instructional materials such as to a classmate, website, or other service. Course materials take a lot of effort to prepare and should be shared only with permission.

4.) …and any other behavior that violates Harvard College policy.

FINAL NOTES

**Thank you to the following scholars whose assistance, materials, and pedagogy informed this syllabus: Niall Bolger, Ana DiGiovanni, Geraldine Downey, Nicole Noll, Katie Powers, Julia Stoyanovich **

- I included works from a variety of scholars—including by women, people of color, queer people, and works from a variety of disciplines and backgrounds.
- All readings are accessible for free through the Harvard libraries and course website.
- In order to collectively create an expectation of commitment to anti-racist, feminist ideals, I included a specific clause about respecting each other's ideas and identities.
- I included my gender pronouns to promote openness about gender expansiveness and to challenge assumptions about gender identities.
- In an attempt to be mindful of students' own experiences, I have included cautionary notes to highlight some material that may be particularly challenging or sensitive for some readers.

Thank you to the artists Iconixar,* Ferdizzimo, *rex, WEBTECHOPS LLP*, *Becris, Komkrit Noenpoempisut, Libertetstudio, Eucalyp, and many others at nounproject whose work populates this syllabus and my presentations