Scientific and Technological Controversies
BASC 201/Fall 2020
Truth (and Lies), Uncertainty, and Bias in Science, Technology, & Journalism

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Monday & Wednesday (2:35 pm - 3:55 pm eastern standard time)— On the Internets with synchronous and asynchronous options. See “Course Delivery Guidelines” for all the glorious details.

Class Overview:

This class uses the angle of controversy to introduce students to the social and political organization, limits, and impact/s of science and technology. In so doing, it introduces students to various academic and critical approaches to the social scientific and humanistic study of science and technology. The class draws on classic academic works in diverse fields such as the history and philosophy of science, media studies, anthropology, and bioethics and integrates a range of engaging and accessible materials (podcasts, movies, op-eds and journalistic pieces) that critically interrogate the power and limits of science and technology.

The class will be organized around the interrelated themes of truth (and lies), uncertainty, and bias in the fields of science, technology, and journalism. Among many other themes, the course will examine: the difficulties in reaching scientific consensus, the weaponization of uncertainty, paradigm shifts in science, the role of values and bias in technological design and scientific discovery, fights for openness and transparency in science and technology, and the politics of hacking, algorithms, journalism and propaganda, surveillance, and whistleblowing.

Course Delivery Guidelines and Core Course Logistics

The terms of this guide are subject to modification as conditions change, in order to provide for flexibility and to optimize course delivery. Course requirements set out in the Course Syllabus (to be distributed on the first day of class) will be final. Current course requirements may change before the start of the semester.

Class Delivery: This class will be taught entirely online and will be primarily composed of two weekly recorded lectures and/or a lecture and a question and answer period; a portion of these will be delivered live with Zoom and will be recorded for those that cannot attend the live lectures or the Q&A period. Every effort will be made to post them within twenty-four hours of the session. Some of the lectures will be pre-recorded and published on MyCourses but I expect to do more of them live to respond to questions from the micro-responses or students who choose to attend the class live. To minimize screen time, the lectures and Q and A period will usually be 40-45 minutes instead of the usual 1:20 minutes allotted to class. Please do not distribute or share the lectures—they are meant for class consumption alone.
Questions/Course Interaction: Students will have the option of asking questions during the live lectures via Zoom/Zoom Chat or sending in questions about the readings or previous lectures. I will address a portion of the questions during my lectures or my Q&A session.

To be clear: you are not required to log in, show up or ask questions during my lectures (though it might be nice to do so and I encourage you to do so if you can!). However, you will be required to write and submit micro-responses, which include at least one question, and these will count toward your final grade. I will also integrate some of material from the micro-response into my lectures and slides and if your question or comment is chosen for my lecture, you will receive extra credit for them.

Guests: I’ve often been able to feature guest lecturers working in the field of science, technology and journalism and they have often been very well received. I have some exiting potential guests but will only move forward if the scheduling works and I can get enough people to show up live for a Q and A session.

Methods of Assessment: The course will include pop quizzes, micro-responses, one midterm essay and four short writing assignments (you will have five options for the short writing responses and only have to complete four of them). See below for a basic overview of assignments. I’ve oriented the class around our readings and engaging with class material and lectures. We won’t be having a final exam or midterm exam but the class assignments do mean you will have to keep up with class lectures and readings.

Office Hours: Office hours are a set time when you can visit me, our teaching assistants or team members to ask questions about course material, assignments, and course guidelines. We are fortunate enough to have four dedicated graduate teaching assistants and four undergraduate team members. We hold office hours on Zoom and they will be spread out during the week at different times to accommodate different schedules and time zones.

Readings: Most readings and movies are available via links on this syllabus or on our course website David Greene, the librarian for Communication Studies, is available for support and research assistance. He can be reached at david.greene@mcgill.ca.

Covid-19: This syllabus has been designed with our current pandemic in mind. I recognize it is a very challenging time for everyone and we will all be spending more time on our screens than we would normally ever, ever do. But I’ve configured things so we can spend a bit less time on the screen and assigned learning material like podcasts and movies that may be a bit more fun. For now, I made the decision to be present for most class days in case that’s helpful for others who would benefit from course co-presence. Please do check in with me or our TA’s if you are having issues or any troubles and we are happy to help in any way we can or direct you to resources and others who can.

Requirements, Methods of Examination, and Grading:
• 6 pop quizzes – 20%  
Open article/chapter/book policy. You will have 24 hours to complete them and they will be administered through MyCourses. The lowest of the 6 will be dropped.

• Mid-Term Essay – 20%  
Due on October 19 at 2:00 PM. Separate instructions will be provided (I’ve included the mid-term essay assignment at the end of this syllabus).

• 6 Micro-Responses + 1 question – 20%  
Posts, which are roughly 250 words and should include one question (not part of the 250 words), will be graded using a simplified system: high pass (90), pass (75), and fail (0). You have to complete 2 posts by October 19. The lowest of the six will be dropped. All posts are due by 10:00 pm/evening (eastern time zone) the day before class. A separate instruction sheet will be provided with assignment details on the first day of class.

4 short writing responses – (5% each) – 20 %  
You will be asked one or a series of short questions about a couple of the readings/assignments and lectures. You will get the questions at least 72 hours before they are due. Answers cannot exceed two pages doubled space max each and separate instructions will be provided. These are not as formal as the mid-term essay but you will be expected to refer and quote from the readings/assigned material and lectures in your reflections.

Grading:
Grade Appeals:
See Appendix A

Other Information and McGill Policies:
See Appendix A

Schedule:

The following is a “working schedule: and preliminary schedule. Class materials are subject to change based on the interests, understanding, and general pace of the class. I will send updates via MyCourses/email and post any new versions on the site.

September 4: Reading the Syllabus

Welcome! I know everyone is dealing with an avalanche of written or video instructions. Please spend the time reading over the syllabus, watching the brief introductory video about the syllabus/class and I will “see” you next week.

September 7: AMAATC (Ask Me Anything About the Class and Why This Class?)

Do you have questions about the class and syllabus? Concerns? Show up and ask live or post questions on our discussion board by Sept 5th at midnight (eastern standard time) and we will collect questions and answer them on September 7th. Please read the following as well:
Loretta Jackson Heyes, “We don’t need more STEM majors. We need more STEM majors with liberal arts training.” Washington Post, February 18, 2015. https://www.washingtonpost.com/posteverything/wp/2015/02/18/we-dont-need-more-stem-majors-we-need-more-stem-majors-with-liberal-arts-training/


**September 9: Ignorance and Uncertainty: How They Drives Science**

Stuart Firestein, “Ignorance: How It Drives Science.” 2012. (Introduction, Chapter 1, 2)

**WEEK 3: SEPTEMBER 14 & 16**

**September 14: Exploiting/Manufacturing Scientific Uncertainty—The Long View**


**September 16: Exploiting/Manufacturing Scientific Uncertainty & The Current Crisis**


**Guest:** Nick King, Associate Professor in the Department of the Social Studies of Medicine, and at McGill University, and an Associate Member in the Department of Epidemiology and Biostatistics at McGill University.

**WEEK 4: SEPTEMBER 21 & 23**
September 21: The Morality of Truth and Lies and Thinking/Rethinking Language and Objectivity


September 23: Rethinking Objectivity, Knowledge, and Q&A Session


Short Response Number 1: Due by 9 am (est) today (you will get the question/s 72 hours prior to the due date)

WEEK 5: SEPTEMBER 28 & 30

September 28: Language and Rethinking Objectivity


Transcript: https://static1.squarespace.com/static/542c2af8e4b00b7cfca08972/t/58ffb590db29d67edabd4e26/1493153189310/How+To+Think+About+Science.pdf

Read Keller bio: https://www.cbc.ca/radio/ideas/how-to-think-about-science-part-1-24-1.2953274

September 30: Knowledge and Truth in the Making


**WEEK 6: OCTOBER 5 & 7**

**October 5: Paradigms and Paradigm Shifts**

Ed Yong, “I Contain Multitudes: The Microbes Within Us and a Grander View of Life.” 2016. (Chapter 2)


**October 7: Decolonizing, Diversifying, and Democratizing Science**


**WEEK 7: OCTOBER 12 & 14**

**October 12: Holiday**

Thanksgiving Holiday, No Class

**October 14: Blind Spots, Hidden Truths, and the Dangerous Illusions that Shape our World**


**Guest:** Ziya Tong

**Short Response Number 2: Due by 9 am (est) today (you will get the questions 72 hours prior to the due date)**

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**WEEK 8: OCTOBER 19 & 21**

**October 19: Knowledge from Below**

- The midterm is based on the Epstein reading so you will have to read it in order to complete the midterm. I've attached the mid-term assignment to this syllabus.

**Midterm Essay Due and Let’s Talk! Q&A/Discussion Session**


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**October 21: Disability and Eugenics**


Visit: http://eugenicsarchive.ca/


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**WEEK 9: October 26 & 28**

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October 26: Disability and Work/Play


David Graeber, “What’s the Point if We Can’t have Fun.” The Baffler, 2014. https://thebaffler.com/salvos/whats-the-point-if-we-cant-have-fun


Short Response Number 3: Due by 9 am (est) today (you will get the questions 72 hours prior to the due date)

October 28:

Break Day. We’ve made this far, you deserve a break 😊

November 2: Access and Intellectual Property


November 4: Social Determinants of Health and Bias in Medicine/Science


Truth, Lies, Bias, and Surveillance in Technology & Journalism

WEEK 11: NOVEMBER 9 & 11

November 9: Surveillance, an Overview and The Long View


November 11: Surveillance, It's not Evenly Distributed.

Simone Browne, “Dark Matters.” Surveillance Studies Reader, 2018


WEEK 12: NOVEMBER 16 & 18

November 16: Surveillance, Technology, and Labor


Short Response Number 4: Due by 9 am (est) today (you will get the questions 72 hours prior to the due date)

November 18: Technology and Bias


November 23: Anonymity, Fake, and Authenticity Online


Ending on a Positive, Practical Note: What Can We Do?

November 25: Reflective Design and Data Justice


### WEEK 14: NOVEMBER 30 & DECEMBER 2

**November 30: Hacking and Whistleblowing**


**Watch video and read written portion:**


**December 2: Red Teaming and Adversarial Critique**

Micah Zenko, Red Teaming, 2015/ [Introduction and excerpts]


**Short Response Number 5: Due by 9 am (est) today (you will get the questions 72 hours prior to the due date)**

**December 3: Wrap Up**

Last day of class but we will finish on December 2
The AIDS Coalition to Unleash Power, better known as ACT UP, roared into existence in 1987 in an era when widespread fears dominated public perceptions about HIV and gay people, especially gay men. Spearheaded by activists, many of them HIV positive, ACT UP members sought to educate the public about the virus, stamp out toxic and dangerous stereotypes, and demand a far more active role in shaping medical treatment and options than was standard at the time.

For this essay, you will be asked to read and watch the following three texts/movies that cover the history and dramatic impact of ACT UP and then write a comparative essay about these texts.

1. How to Survive a Plague, a documentary film.

2. 120 Beats per Minute, a fictionalized account of ACT UP Paris based on the director’s involvement with the group.*

3. Steven Epstein, “The Construction of Lay Expertise: AIDS Activism and the Forging of Credibility in the Reform of Clinical Trials,” an academic article by sociologist Steven Epstein that I also assigned for class.

(* 120 Beats Per Minute features several vivid sex scenes. If that’s not your cup of tea, please contact me and I will assign another documentary for you to watch instead).

A core premise in this class is that different genres of writing and communication convey distinct types of information and messages and no single genre can provide a complete account of a phenomenon. To put it in a slightly different way: each of these texts does something different and does so differently in relation to both content and their style, rhetoric, and tone.
In this essay, please write a four to five-page (max) essay comparing and contrasting what you learned in each of these three texts. The assignment is open-ended, but here are some pointers for how to proceed. At a minimum, please address what you found compelling and convincing in these texts and discuss how these genres complement each other and how they diverge. You don't need to propose an overarching argument, but your essay should be peppered with insightful, specific, and meaningful points about these texts. You will be expected to refer to particular scenes/quotes from the movie and text. You don't need to write a formal academic essay, but can be a bit more playful or personal so long as you address what is expected of you and so long as you write clearly. It is acceptable to write about your opinions and reactions to these texts, but you should do so by addressing content and arguments in the movies and essay.

Before you start writing, read and follow these reference guides for proper terminology, and follow these guidelines established by these communities.

https://www.glaad.org/reference/lgbtq
https://www.glaad.org/reference/offensive
https://www.glaad.org/reference/hiv

For a helpful overview of the compare and contrast essay genre, please read

https://www.wikihow.com/Write-a-Compare-and-Contrast-Essay (For this essay, points 2 and 5 are especially relevant.)

Here are two other things to keep in mind. First: while the teaching assistants who will be grading the essays will have read the article and watched the films by the time they read your piece, please assume a more naive reader. I will give some examples in class covering tips for writing in a way that presumes the reader may have less knowledge than you do.

Second: with a few exceptions, most students will find the academic article more tedious (and also more detailed). These points are obvious, so please don’t make them the basis of your essay unless you can add some counterintuitive twist. When I travel on a plane, I routinely zonk out when reading academic articles, and even when exhausted, I can soldier through a movie. That's the nature of these mediums, and I'd like you to entertain less apparent insights.

Please use 12 pt. font, save our eye-sight by double-spacing-the-paper and number the pages. For this essay, you are not required to include any other texts from the class, but you are welcome to do so. Since you have six weeks to complete this assignment, no late papers will be accepted. You are welcome to turn it in early as well.

Choose one of the following four citation styles. Please note on your exam which style you have used: Modern Language Association, Harvard Style, Chicago Manual of Style, or the American Psychological Association. Google them, and the Internet will deliver, right to your screen,
guides for how to implement them. **Graders will deduct points if you don't use one of these, or you misapply them.**
Appendix A

Language: In accordance with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

Accommodations: Students requiring special testing accommodations or other classroom modifications should notify Prof. Coleman and the Office for Students with Disabilities as soon as possible: The OSD is located 1010 Sherbrooke Street West, Suite 410 and their website is https://www.mcgill.ca/osd/ Phone: 398-6009 (voice), 398-8198 (TDD).

Academic Integrity: McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism, and other academic offenses under the Code of Student Conduct and Disciplinary Procedures (for more information, see www.mcgill.ca/students/srr/honest/). L’université McGill attache une haute importance à l’honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l’on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l’étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site www.mcgill.ca/students/srr/honest/).

Academic resources: Students looking for additional assistance with academic reading, study, research and writing skills should consult the McGill academic resources website at: www.mcgill.ca/students/academicresources/.

Counseling: McGill’s Counseling Service is located in the Brown Student Services Building and provides extensive personal, academic, and career counseling to undergraduate and graduate students, including workshops on study skills, multiple-choice exams, and test anxiety/stress management (Phone: 398-3601, https://www.mcgill.ca/wellness-hub/).