CPLS UN3770:
Introduction to Digital Media

Spring 2017

[Room] | Tue/Thur, 1:10 - 2:25

Professor: Grant Wythoff
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Heyman Center 304
Office Hours by appointment
Course site:
https://gwijthoff.github.io/digitalmedia

Skip to the schedule...

Description

Over the past decade, digital media have made strange the very fabric of our conversations, movements, aesthetic experiences, and political consciousness. These changes were prepared for by information theorists in the 1940s, cyberneticians in the 1950s, and the architects of networked computation in the 1960s. But only now have we begun to live out the futures that were dreamed of by these technologists. Today with our digital devices, we experience their dreams as beliefs, daily routines, and compulsions.

This class will introduce students to the history and theory of digital media. We will begin by examining the historical roots of the concept of "information," and then proceed along a "stack" of topics in digital culture: code, interface, device, infrastructure, and power. Each of these concepts will be explored through

a comparative framework, using hands-on exercises and readings from across the disciplines, including the philosophy of computation, history of technology, cultural studies, science fiction, and media theory. We will think historically (how have media been experienced as "new" at different moments in time?), theoretically (how exactly do we address "medium" as an object of study), and tactically (how can we use our local experience of digital devices as a framework for thinking global networks?).

Throughout the semester, in-class "exercises" will link the theory we've encountered in our readings to everyday practice, including a "data detox" designed by the Tactical Technology Collective, FemTechNet's "Locking Down Your Digital Identity", and Pretty Good Privacy (PGP) with Keybase.

Grade breakdown

20% participation

The importance of the works under discussion lies not in the works themselves, but rather in their interrelationship with our discussions and other media that you and I encounter in our daily lives. This means that class participation is vital to the success of this course. Simply attending class will not be enough to earn full participation credit. Instead, you must be an active participant, someone who comes prepared and engages with all aspects of the class.

30% weekly posts

Each week, students will post a brief update (~300 words) to the CourseWorks blog by 7:00am on Tuesday. These posts can take the form of, among other things, a) an explanation, questioning, or complication of the week's readings, b) an interesting document or resource that you've found related to them, or c) an update on the progress of your midterm or final project. This is simply a means of checking in with one another as we work through the ideas of the course.

25% "Re-design" assignment

One of the aims of this course is to explore the relationship between theory and practice. To this end, you will construct a "re-design" of an existing media system, due March 9. These interventions can range from micro-level (e.g. proposing a particular tweak to the infrastructure of the Internet and tracing its consequences) to whole-cloth (e.g. envisioning an alternate peer-to-peer messaging system). You will situate this re-design amongst the readings read to this point, using the texts to help imagine the implications of your re-design.

The final form of this assignment should be a paper of 5 to 7 pages, properly referenced, and with additional media as necessary or desired. Virtually any medium could work: paper prototypes, clay, painting, video, etc. You will additionally give an informal presentation of your re-design to the class (plan on approximately 5 minutes for the presentation and questions from the class).

You will choose your re-design in discussion with me two weeks before the assignment is due (i.e., by Feb 23rd). More details on this project will follow. For inspiration, see:

- Anthony Dunne and Fiona Raby, *Speculative Everything: Design, Fiction, and Social Dreaming*, (Cambridge: MIT Press, 2013).
- "Forecasts" published by *The Long + Short* magazine

25% final project

For your final project, you will select a specific digital device and trace the lifecycle of its manufacture, use, re-use, and disposal. This is a very big task. A single smartphone, for instance, contains over two hundred chemical compounds, and the scale of its production truly global: from rare-earth metal mines in Baotou, to data centers in Iowa, to grey markets in Jakarta, and electronics scrap yards in Delhi. So, there are many different methods for going about this, many different pieces of the puzzle you can choose to focus on, and no two final projects will look alike. Options include any or a combination of the following:

- Create a supply chain map for your device using Sourcemap.
- Express the composition of your device using a symbol system like Otto Neurath's Isotype from the 1920s, a font called the Pictorial Communication Language (PICOL), or a design structure matrix.
- Photogrammetry using the 123D Catch app, which allows you to upload photos from your smartphone to the cloud, where they're transformed into a textured 3D model.

In addition to the above, you will write a paper of around 10 pages that situates your artifact within the contexts discussed in class. The paper should have a clear argument supported by evidence. I expect you to draw from the readings we considered, as well as secondary research from sources we did not cover.

I ask that you submit a brief proposal of your project to me in class on April 18. The final project is due May 8. You will also present on your artifact during the final two class sessions for around 10 minutes.

Summary of assignment due dates

- **7am Tuesdays:** weekly post
- **March 9:** Re-design paper and presentation
- **April 18:** final project proposal
- **May 8:** final project due

Administrivia

Weekly attendance in class is expected. If you must be absent from a session for a serious reason, then you should contact me before the missed class and explain why you will not be in attendance. Cases of continuous, unexplained absence will result in a penalty to your grade or your ineligibility to complete the course. Attendance and active participation in discussions are part of fulfilling the course requirements. I will notify an advising dean if you have three or more unwarranted absences. No extensions will be given except in extreme (and verifiable) circumstances. These circumstances include reasons of health and extenuating circumstances, such as death of a family member.

Laptop policy

Because we will be conducting exercises in class, you are asked to bring your laptop to every session. Be sure to practice good screen etiquette: keep it to the side and don't stare too long.

Academic integrity

Columbia's intellectual community relies on academic integrity and responsibility as the cornerstone of its work. Graduate students are expected to exhibit the highest level of personal and academic honesty as they engage in scholarly discourse and research. In practical terms, you must be responsible for the full and accurate attribution of the ideas of others in all of your research papers and projects; you must be honest when taking your examinations; you must always submit your own work and not that of another student, scholar, or internet source. Graduate students are responsible for knowing and correctly utilizing referencing and bibliographical guidelines. When in doubt, consult your professor. Citation and plagiarism-prevention resources can be found at the GSAS page on Academic Integrity and Responsible Conduct of Research (http://gsas.columbia.edu/academic-integrity).

Failure to observe these rules of conduct will have serious academic consequences, up to and including dismissal from the university. If a faculty member suspects a breach of academic honesty, appropriate investigative and disciplinary action will be taken following Dean's Discipline procedures (http://gsas.columbia.edu/content/disciplinary-procedures).

Disabilities accommodations

If you have been certified by Disability Services (DS) to receive accommodations, please either bring your accommodation letter from DS to your professor's office

hours to confirm your accommodation needs, or ask your liaison in GSAS to consult with your professor. If you believe that you may have a disability that requires accommodation, please contact Disability Services at 212-854-2388 or disability@columbia.edu. Important: To request and receive an accommodation you must be certified by DS.

Schedule

Theories

January 17: introductions

January 19: definitions

Ronald R. Kline, *The Cybernetics Moment: Or Why We Call Our Age the Information Age*, (Baltimore: Johns Hopkins University Press, 2015), p. 1-36

- Introduction
- 1 War and Information Theory

January 24: tinkerers 1

James Gleick, *The Information: A History, A Theory, A Flood* (Vintage Books, 2012), pp. 3-12, 78-124, 233-268

- Prologue
- 4 To Throw the Powers of Thought into Wheel-Work
- 8 The Informational Turn

January 26: tinkerers 2

Alison Winter, "A Calculus of Suffering," in *Science Incarnate: Historical Embodiments of Natural Knowledge,* ed. Christopher Lawrence and Steven Shapin (University of Chicago Press, 1998), 202–39.

Dreams

January 31: global cyberpunk 1

William Gibson, *Neuromancer* (Ace Books, 1984), Part Two: The Shopping Expedition, pp. 43-98.

Xiao Liu, "Magic Waves, Extrasensory Powers, and Nonstop Instantaneity: Imagining the Digital beyond Digits," *Grey Room* 63 (Spring 2016): 42–69.

Exercise: Data Detox 1: Discovery

February 2: global cyberpunk 2

Eden Medina, *Cybernetic Revolutionaries: Technology and Politics in Allende's Chile* (Cambridge: MIT Press, 2014), p. 1-14, 95-140

- Prologue
- Introduction: Political and Technological Visions
- 4 Constructing the Liberty Machine

February 7: afrofuturism 1

Delany, *Stars in My Pocket Like Grains of Sand* (Middletown, CT: Wesleyan University Press, 2004 [1984]), selections.

Exercise: Data Detox 2: Being Social

February 9: afrofuturism 2

Ytasha L. Womack, *Afrofuturism: The World of Black Sci-Fi and Fantasy Culture* (Chicago: Chicago Review Press, 2013), p. 3-24, 39-50

- Evolution of a Space Cadet
- Project Imagination

Mark Dery, "Black to the Future: Interviews with Samuel R. Delany, Greg Tate, and Tricia Rose," in *Flame Wars: The Discourse of Cyberculture*, ed. Mark Dery (Durham, NC: Duke University Press, 1994), 179–222.

Approaches

February 14

John Durham Peters, "Understanding Media," *The Marvelous Clouds: Toward a Philosophy of Elemental Media* (University of Chicago Press, 2016), p. 13-52.

Exercise: Data Detox 3: Searching, Surfing, Shopping

February 16

Wendy Hui Kyong Chun, "Someone Said New Media," *New Media / Old Media: A History and Theory Reader,* 2nd ed. (Routledge, 2016)

Code

February 21

N. Katherine Hayles, "Print Is Flat, Code Is Deep: The Importance of Media-Specific Analysis," Poetics Today 25, no. 1 (2004): 67–90.

Wendy Hui Kyong Chun, "On 'Sourcery,' or Code as Fetish," *Configurations* 16, no. 3 (Fall 2008): 299–324.

Exercise: Data Detox 4: Connecting

February 23

Adrian Mackenzie, "The Problem of Computer Code: Leviathan or Common Power?" (2003)

Nick Montfort et al., *10 PRINT CHR$(205.5+RND(1)); : GOTO 10* (Cambridge: MIT Press, 2012), selections

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Interfaces

February 28: users 1

Don Norman, "The Psychopathology of Everyday Things" in *The Design of Everyday Things* (Basic Books, 2013 [1988]), pp. 1-36.

Bruce Sterling, *Shaping Things* (Cambridge: MIT Press, 2005).

Exercise: Data Detox 5: Making Choices

March 2: users 2

Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge: MIT Press, 2006), p. 1-24, 149-190.

- Introduction
- 4 The Screen

March 7: makers 1

Nakamura, Lisa. 2014. "Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture." American Quarterly 66(4): 919–941.

Steven J. Jackson, "Rethinking Repair," in *Media Technologies: Essays on Communication, Materiality, and Society* (Cambridge: MIT Press, 2014), 221–39.

Exercise: Data Detox 6: Who Do They Think You Are?

March 9: makers 2

(Re-design assignment due)

Debbie Chachra, "Why I am Not a Maker," *The Atlantic,* Jan 23, 2015, http://www.theatlantic.com/technology/archive/2015/01/why-i-am-not-a-maker/384767/.

Joi Ito, "Shenzhen Trip Report: Visiting the World's Manufacturing Ecosystem," [blog post], https://joi.ito.com/weblog/2014/09/01/shenzhen-trip-r.html

Tim Maughan, "The Changing Face of Shenzhen, the World's Gadget Factory," *Vice,* Aug 19, 2015, http://motherboard.vice.com/read/beyond-foxconn-inside-shenzhen-the-worlds-gadget-factory

An Xiao Mina, " 'Created' in China: Shenzhen is Making Hardware Like Silicon Valley Makes Apps," *Fusion,* Sept 7, 2016, http://fusion.net/story/338939/created-in-china-shenzhen-hardware-startups/

SPRING BREAK: March 13-17

Devices

March 21: privacy 1

Readings announced as events unfold.

Exercise: Data Detox 7: Creating a New You

March 23: privacy 2

Readings announced as events unfold.

March 28: habits 1

Dominic Pettman, *Infinite Distraction* (Polity, 2015).

Exercise: Data Detox 8: What Next?

March 30: habits 2

Wendy Chun, *Updating to Remain the Same,* (Cambridge: MIT Press, 2016), Introduction and all interstitial sections, total around 50pp.

Infrastructures

April 4: networks 1

Nicole Starosielski, *The Undersea Network,* (Duke University Press, 2015), pp. 1-25, 94-169.

- "Introduction: Against Flow"
- 3 "Gateway: From Cable Colony to Network Operations Center"
- 4 "Pressure Point: Turbulent Ecologies of the Cable Landing"

Project website at `http://surfacing.in/`

Exercise: FemTechNet's "Locking Down Your Digital Identity"

April 6: networks 2

Christian Sandvig, "Connection at Ewiiaapaayp Mountain: Indigenous Internet Infrastructure" in *Race After the Internet,* ed. Lisa Nakamura and Peter Chow-White (Routledge, 2011), p. 168-200.

Neal Stephenson, "Mother Earth Mother Board," Wired (December 1996), https://www.wired.com/1996/12/ffglass/.

April 11: waste 1

Jennifer Gabrys, *Digital Rubbish: A Natural History of Electronics,* (Univ. of Michigan Press, 2011), p. 1-44, 74-100

- Introduction: A Natural History of Electronics
- 1 Silicon Elephants: The Transformative Materiality of Microchips
- 3 Shipping and Receiving: Circuits of Disposal and the 'Social Death' of Electronics

Exercise: Pretty Good Privacy (PGP) with Keybase

April 13: waste 2

Abhimanyu Shrivastava, "Transboundary Movement of E-Waste," *International Policy Digest,* Sept 13, 2016, http://intpolicydigest.org/2016/09/13/transboundary-movement-e-waste/

Andrew J. Hawkins, "E-Waste Empire," *The Verge,* June 22, 2016, http://www.theverge.com/2016/6/22/11991440/eri-e-waste-electronics-recycling-nyc-gadget-trash

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Power

April 18: control 1

(Final project proposal due)

Bernard Harcourt, *Exposed: Desire and Disobedience in the Digital Age* (Cambridge: Harvard University Press, 2015), p. 1-28, 217-250.

- The Expository Society
- 8 The Mortification of the Self
- 9 The Steel Mesh

April 20: control 2

Giorgio Agamben, *What is an Apparatus*? (Stanford Univ Press, 2009), p. 1-24.

April 25: publics 1

Danah Boyd, "White Flight in Networked Publics" in *Race After the Internet,* ed. Lisa Nakamura and Peter Chow-White (Routledge, 2011), p. 203-222.

Curtis Marez, "Cesar Chavez, United Farm Workers, and the History of Star Wars," in *Race After the Internet,* ed. Lisa Nakamura and Peter Chow-White (Routledge, 2011), p. 85-108.

April 27: publics 2

William Mazzarella, "The Myth of the Multitude, Or, Who's Afraid of the Crowd?," *Critical Inquiry* 36, no. 4 (2010): 697–727.

Acknowledgments

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