

TECHNOLOGY & SOCIETY 200: Prototyping Pasts and Futures

UVic | Fall 2017 | M + R | 1:00-2:20pm | MAC D115 | jentery.github.io/ts200

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Office Hours (Fall 2017) | M | 10am-12pm | CLE D334

ACKNOWLEDGMENT OF THE TERRITORIES

The Department of English acknowledges and respects the Songhees, Esquimalt, and WSÁNEĆ peoples on whose traditional territories the University of Victoria stands and whose historical relationships with the land continue to this day.

COURSE DESCRIPTION

Technology is the campfire around which we tell our stories. -- Laurie Anderson

An offering in the Technology and Society minor at UVic, this course is about the entanglement of societies and cultures with Western technologies. We'll examine some histories of these entanglements, discuss their effects today, and also speculate about their trajectories. One important question will persist throughout the term: how can and should we intervene in technologies as practices? Rather than treating technologies as tools we use or objects we examine from a distance, we'll prototype with and through them as a form of inquiry. You'll turn patents into 3-D forms, compose and implement design scenarios, "datify" old tech, and imagine a device you want to see in the world. You'll document your research and development process along the way, reflect on what you learned, present your prototypes and findings, and also build a vocabulary of "keywords" for technology and society. I will not assume that you're familiar with fields such as science and technology studies, media studies, or cultural studies, and the prototyping exercises will rely on low-tech approaches. Technical competency required: know how to send an email. I'm looking forward to working with you.

REQUIRED TEXTS

There is no textbook for this course. Please visit jentery.github.io/ts200, where I link to all course materials, including readings, games, video, and audio. Some readings are passcode-protected (see me for an ID and password).

FORMAT

This course is project-based, meaning you will iteratively develop your own prototypes in response to a series of prompts. You will document and periodically share your work and present it at the term's end. Most of our class meetings will involve:

- **A Workshop:** We will experiment with a particular prototyping technique. You will be asked to apply what you learned to your own work.
- **Lecture and Discussion:** We will chat about the workshop and course material, including the assigned readings, video, audio, and games. I may decide to listen, without much (if any) intervention in the conversation. I may also decide to lecture on a given topic or ask you to present material from your research and

prototyping. I will often begin our meetings with an overview of keywords relevant to the workshops and discussion at hand.

You should arrive to each meeting on time, having read/watched/played/listened to the assigned material, which is listed at jentery.github.io/ts200.

ASSIGNMENTS AND ASSESSMENT

You will be required to keep a log, give a presentation, develop your own prototypes, participate in workshops and discussions, and take an exam. Below are descriptions of the assignments. All assessment practices will follow the UVic Undergraduate Grading Scale, which you should review early in the term. It's available via bit.ly/scaleuvic.

Please note that the assignments are subject to minor changes as the course progresses. If I do make a change, then I will notify you by email. Also, the exam and presentation are essential to passing the course. Failure to complete these requirements will result in a failing N grade (calculated as a 0 for your GPA). I do not post marks outside my office, and I do not use plagiarism detection software.

Log (two marks, each 25% of your final mark, due 16 October and 30 November)

At the beginning of the term, you will form groups of three or four people (your choice). With this group, you will research and produce four different prototypes, and (as a group) you will keep *one* log documenting the group's work during and outside of class. Consider treating the log like a lab notebook, with hypotheses, reviews of historical material, documentation, experiments, findings, and reflections. The log will be assessed twice. I will mark it based on its: 1) consistency from week to week, 2) development over time, 3) self-reflexivity (including its awareness of methods and decisions), 4) integration of class discussions and course material, 5) quality (including its combination of critical thinking with creativity and experimentation), 6) inclusion of documentation or sample material, and 7) attention to change (including notes on hiccups and surprises).

The tone and style of your log should be more formal than notes from class but less formal than a research paper intended for an academic audience. Your entries should be self-aware and well written (without typos or the like). Feel free to reference work conducted by your peers or to spark dialogue with them via the log. Also, don't hesitate to combine your preferred modes of composition: writing, drawing, collage, outlining, sketching, graphing, programming, images, audio, video, etc. At some point early in the term, you'll need to create an online folder, site, or repository to share digital files with me and amongst your group. Then you can point others and me to the appropriate URL (private or public). For the purposes of this class, your log may be composed across digital and tactile media, with material available online and off. I recommend documenting the development of all media, including tactile media, using photography, video, or the like. In short, work done in the log should be steeped in evidence of iterative development, and you should provide attribution (i.e., credit for who did what).

I will assess your log twice. Please submit it on 16 October and then again on 30 November. Since you are developing one log per group and also conducting this work collaboratively, everyone in your group will receive the same mark for your log. If you are encountering any issues with collaboration in this course, then please contact me as a group or individually.

I will use the following rubric to assess your logs:

A+: The content is well-composed and -researched, with attribution, references, thorough documentation, and few or no typos. Both it and the prototypes combine critical and creative thinking anchored in class discussions and assigned materials. The entries and prototypes not only meet the requirements of the prompts but also add compelling elements, features, and/or perspectives that were not required for the assignments. These additions augment the overall quality of the log and prototypes and demonstrate that you are learning the course material and exceeding the course expectations.

A- or A: The content is well-composed and -researched, with attribution, references, documentation, and few typos. Both it and the prototypes combine critical and creative thinking anchored in class discussions and assigned materials. The entries and prototypes not only meet the requirements of the prompts but also add interesting elements, features, and/or perspectives that were not required for the assignments. These additions augment the overall quality of the log and prototypes and demonstrate that you are learning the course material and at times exceeding the course expectations.

B- through B+: The content is well-composed and -researched, with attribution, references, documentation, and few typos. Both it and the prototypes combine critical and creative thinking anchored in class discussions and assigned materials. The entries and prototypes meet the requirements of the prompts. Overall, the log and prototypes demonstrate that you are learning the course material.

C or C+: The content is adequately composed and researched, with attribution, references, some documentation, and several or many typos. The entries and prototypes meet the requirements of the prompts. Overall, the log and prototypes demonstrate that you are learning some of the course material.

D: The content is not adequately composed and researched and does not contain attribution, references, and/or documentation. It contains many typos. The entries and prototypes do not meet the requirements of the prompts. Overall, the log and prototypes demonstrate that you are not learning the course material.

F: The log and prototypes are missing entirely or in part. They do not meet any requirements of the prompt.

Exam (30% of your final mark, during the official exam period)

At the term's end, the final exam will be administered during the official exam period. It will cover all course materials, class discussions, and lectures, with an emphasis on the keywords and assigned materials for each module. It will consist of 50 questions (short-answer and multiple-choice). It will not be open-book, and it will be taken individually.

Presentation (20% of your final mark, on 30 November)

Our final meeting will be dedicated to presentations of your work from Module 4 (see schedule below and online at jentry.github.io/ts200). Your group presentation should include the following:

- A group meeting with me (during office hours or by appointment) at some point between 1 and 23 November,
- A talk (between four and five minutes) about your final prototype (from Module 4),
- Your prototype from Module 4,
- Slide or other such presentation materials, and
- A “one-sheet” describing your prototype to newcomers (one-sheets are common in press kits.). The one-sheet should be printed and either mounted next to your prototype or distributed by hand.

Since you are developing your prototypes in groups and also conducting this work collaboratively, everyone in your group will receive the same mark for your presentation.

POLICIES

Late Submissions

Barring exceptional circumstances, I will not accept your log entries after the due date. Since log entries are meant to build on each other, I recommend that you do not fall behind on them. Of note, the presentation can only occur during the final meeting of the class. Thanks for understanding.

Absences

Regular attendance in undergraduate courses is expected. Attendance and active participation in discussions and workshops are part of fulfilling the course requirements. If you must be absent from class, then you should contact me beforehand, if only to keep me in the loop. Cases of continuous, unexplained absence could result in your ineligibility to complete the course.

Laptops

The use of laptops during class is encouraged but not required.

Educational Technology

UVic cannot require students to disclose personal information to technologies or organizations that may store information on servers located outside of Canada because disclosure of personal information to vendors, systems, or services or accessing that personal information outside of Canada is restricted by section 30.1 of BC's *Freedom of Information and Protection of Privacy Act* (FIPPA). Personal information is information about an identifiable individual—for example, your name or your email address. In this course, I will not require you to use any educational technologies that store or access your personal information outside of Canada.

Extensions

No extensions will be given except in extreme (and verifiable) circumstances. These circumstances include reasons of health and extenuating circumstances, such as the death of a family member.

Learning Climate, Human Rights, Equity, and Fairness

The University of Victoria is committed to promoting, providing, and protecting a positive, supportive, and safe learning and working environment for all its members. All students and faculty members are expected to adhere to the UVic Human Rights, Equity, and Fairness policy (Policy GV0200). You should alert me immediately if you have any questions about this policy and its application, or if you have concerns about course proceedings or participants.

Academic Integrity

All students are also expected to adhere to the UVic Policy on Academic Integrity. (Please note the new regulation change, effective May 2017: “unauthorized use of an Editor is prohibited, unless the instructor grants explicit written authorization.”) Violations of this policy will result in a failing grade for the given assignment and may additionally result in a failing grade for the course. By taking this course, you agree that all submitted assignments may be subject to an originality review. I do not use software to detect plagiarism in essays, logs, or any other assignments.

Accessibility

Students with diverse learning styles and needs are welcome in this course. If you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Centre for Accessible Learning (CAL) as soon as possible. CAL staff is available by appointment to assess specific needs, provide referrals, and arrange appropriate accommodations. The sooner you let us know your needs, the sooner we can assist you in achieving your learning goals in this course.

Email

With the exception of holidays and weekends, I will respond to your emails within 24 hours.

Course Evaluation Survey

The Evaluation Survey for this course will be available online and distributed by the university via a URL. I encourage you to complete it immediately before or after our last class meeting. I use course evaluations to improve my courses and teaching.

SCHEDULE

The schedule is available (with links to readings, games, video, audio, and related materials) at jentry.github.io/ts200. It is also copied below, and it is subject to change. Throughout the term, I will touch base with you about the workload and (if need be) will adjust the schedule accordingly. If I make any changes to the schedule, then I will notify you by email and during class.

MODULE 1: Memory, Novelty, Obsolescence

Technologies are entwined with the social and cultural production of memory, novelty, and obsolescence. Consider the use of search engines to recall information, the rate at which mobile devices are discarded, or how frequently software and social networks demand an update. What might history tell us about these issues, and what might we learn from prototyping old technologies that were once new?

KEYWORDS: affect (Anna Munster), angel of history (Walter Benjamin), archaeology (Wolfgang Ernst and Jussi Parikka), black box (Bruno Latour), entanglement (Karen Barad), failure (Edward Jones-Imhotep), formats (Jonathan Sterne), index (Mary Ann Doane), infrastructure (Shannon Mattern), interface (Lori Emerson), magic (Carolyn Marvin), memory (Wendy Hui Kyong Chun), new media (Lisa Gitelman and Lev Manovich), planned obsolescence (Giles Slade and Kathleen Fitzpatrick), preservation (Dene Grigar), remediation (Jay David Bolter and Richard Grusin), and storage (Matthew Kirschenbaum)

PROTOTYPING TECHNIQUE: 2-D to 3-D Translation

M 11 SEPT: Watch (before class) ["First Sounds: Humanity's First Recordings of Its Own Voice"](#) (David Giovannoni) and ["When Games Went Click: The Story of Tennis for Two"](#) (Raiford Guins, Laine Nooney, Vlad Nudin, et al.) | Form Groups (in class) | Watch (in class) ["Uluatore"](#) (Fiona Keenan) | Lecture: From Inventors and Innovation to Mess and Maintenance | Workshop: Logging Your Work in this Course

R 14 SEPT: Read (before class) ["Society"](#) (Glenn Hendler) and ["Technology"](#) (me) | Lecture: Beyond Tools and Instruments | Workshop: Finding and Reading Patents

M 18 SEPT: Read (before class) ["Funes the Memorious"](#) (Jorge Luis Borges) and ["The Story of Cold Dark Matter"](#) (Cornelia Parker and Tate) | Watch (in

class) ["Memex Animation: Vannevar Bush's Diagrams Made Real"](#) (University of Sheffield) | Lecture: Re-membering the Past | Workshop: The Exploded View

R 21 SEPT: Research and Develop Your First Prototype (before and during class) | Workshop: Absence, Form, and Practice in Patents

M 25 SEPT: Finish and Present Your First Prototype (before and during class) | Discussion: How Do We Feel about Prototyping?

LOG FOR MODULE 1 (11 Sept - 25 Sept): Find a patent (dated between 1850 and 1950) for a technology that no longer exists, is no longer popular, or both. Determine why it was considered to be novel during its time and why it was rendered obsolete. Also determine what the technology was expected to "remember" (recall, process, and/ or compile) for people. After you've conducted this research and written down your findings in your log, use materials of your choice (e.g., paper, cardboard, plasticine, software, or CNC) to bring your technology off the page, translating your 2-D patent into a 3-D form. (Bonus points if you get [parts of] your prototype to work.) Once you've prototyped the 3-D form, use ~400 words to communicate what you learned about memory, novelty, or obsolescence (pick one) from the prototyping process. Be sure to log your research and prototyping as you progress through the module (from 11 Sept to 25 Sept). Include in the log some documentation of the process (e.g., photographs, sketches, audio, and/or video) as well as notes from the workshops, lectures, and assigned readings and video.

MODULE 2: Design, Context, Critique

Design is much, much more than adding a layer of polish to a technology or form. It is also a means of embodied experimentation and critique, and it can contextualize technology's development and use. While a lot of popular design is now associated with templates, filters, skins, and bundles of files, this module foregrounds it as a scenario, which can be scripted, implemented, and integrated into social and cultural issues.

KEYWORDS: adaptation (John Ira Jennings), adaptive (Sara Hendren), adversarial (Carl DiSalvo), aesthetics (Miriam Hansen), customization (ginger koons), critical (Jeffrey Bardzell and Shaowen Bardzell), critique (Michel Foucault and Judith Butler), design fiction (Bruce Sterling), embodiment (Jessica Rajko), experiments (Natalie Jeremijenko), graphic (Johanna Drucker), interaction (Paul Dourish), kit-of-no-parts (Hannah Perner-Wilson), making (Matt Ratto and Garnet Hertz), reverse engineering (Anne Balsamo), standards (Susan Leigh Star), storytelling (Erik Loyer), text (Anne Burdick), use (Andrea Botero), and values (Helen Nissenbaum)

PROTOTYPING TECHNIQUE: Design Scenario

R 28 SEPT: Peruse (before class) [What Jane Saw](#) (Janine Barchas) and [Making Core Memory](#), including [@lolweavers](#) (Daniela K. Rosner et al.) | Lecture: Immerse Yourself and Critique It, Too?

M 2 OCT: Read (before class) "[Media](#)" (Lisa Nakamura) and "[Space](#)" (Helen Morgan-Parmett) | Lecture: What's Wrong with User-Centred Design? | Workshop: Composing Force Maps and Diagramming Scenarios

R 5 OCT: Read (before class) "[Making the Model: Scholarship and Rhetoric in 3-D Historical Reconstructions](#)" (Elaine Sullivan, Angel David Nieves, and Lisa M. Snyder) | Lecture: Design, Contingency, and Embodiment | Workshop: Making Storyboards

R 12 OCT: Research and Develop Your Second Prototype (before and during class) | Workshop: Implementing Design Scenarios

M 16 OCT: Finish and Present Your Second Prototype (before and during class) | Submit Your Log for Mid-Term Assessment | Discussion: How Do We Feel about Design Scenarios?

LOG FOR MODULE 2 (28 Sept - 16 Oct): Return to your first prototype and the corresponding patent. Research the context in which the patent was developed and the technology was used. Look for materials in journals, magazines, advertisements, photographs, online archives/collections, and even fiction. Based on these materials, develop a design scenario detailing how your technology would have been operated (or used, or consumed) during its time. Since you weren't there and you can't inhabit the past, your scenario will necessarily make an argument about history and even a critique of existing approaches to the past. The scenario should at a minimum include the following elements: characters, setting(s), actions, and a perspective. You are welcome to compose it as a text-only script, but don't hesitate to include photographs and/or illustrations. Once it's ready, implement it at least twice. This means you'll need some people (in your group or not) to act it out. (Bonus points if you record an implementation and submit the video as part of your log.) Once you've prototyped your design scenario, use ~400 words to communicate what you learned about design, context, or critique (pick one) from the prototyping process. Be sure to log your research and prototyping as you progress through the module (from 28 Sept to 16 Oct). Include in the log some documentation of the process (e.g., photographs, sketches, audio, and/or video) as well as notes from the workshops, lectures, and assigned readings and web materials.

MODULE 3: Labour, Play, Control

Digital technologies are frequently associated with discrete-task precarity and 24/7 productivity. Attention produces value (or data), and many decisions are delegated to algorithms and moderators. The work may feel or appear immaterial, too. What, if anything, do we learn from quantifying social and cultural activities, and can technologies be used to improve labour conditions?

KEYWORDS: algocracy (A. Aneesh), algorithm (Kate Crawford), attention economy (Jonathan Beller), big data (Jodi Dean), casual (Aubrey Anable), computer vision (Trevor Paglen), control (Gilles Deleuze and Alexander Galloway), culture industry (Theodor Adorno and Max Horkheimer), environment (Nicole Starosielski), Fordism (Karl Marx and Nick Dyer-Witheford), goldfarming (Lisa Nakamura), gamification (Ian Bogost),

hacking (Gabriella Coleman), immaterial labour (Maurizio Lazzarato), informatics of domination (Donna Haraway), internet of things (Beth Coleman), labour (Hannah Arendt), Luddism (Karl Marx and Nick Dyer-Witheford), master's tools (Audre Lorde), Mechanical Turk (Ayhan Aytes), moderation (Adrian Chen), noise (Tara Rodgers and Tricia Rose), play (Mary Flanagan), playbour (Trebor Scholz), scientific socialism (Karl Marx and Nick Dyer-Witheford), security (Zach Blas), wages (Selma James), and work (Hannah Arendt)

PROTOTYPING TECHNIQUE: Datification

R 19 OCT: Read (before class) ["Digital"](#) (Tara McPherson), ["Labor"](#) (Vicki Mayer) and ["Data"](#) (Melissa Gregg and Dawn Nafus) | Lecture: All of Your Fun Belongs to Them

M 23 OCT: Play (before class) games by [Mattie Brice](#), [Molleindustria](#), and [Nicky Case](#) | Watch (during class) [Sleep Dealer](#) | Lecture: From Surveillance to Control | Workshop: Experiments with Quantification

R 26 OCT: Read (before class) ["Number Between 0 and 1"](#) (Siah Armajani and MoMA) | Peruse (before class) ["Maps"](#) (Ingrid Burrington) | Lecture: Where's the Material? | Workshop: Building a Data Model

M 30 OCT: Research and Develop Your Third Prototype (before and during class) | Workshop: Sharing Your Data

R 2 NOV: Finish and Present Your Third Prototype (before and during class) | Discussion: How Do We Feel about Data?

LOG FOR MODULE 3 (19 Oct to 2 Nov): Return to your technology from Prototypes 1 and 2. At this point in the term, you should have a 3-D version of that technology's form as well as a design scenario for its historical use or operation. Now I'm asking you to conjecture a bit. Research the technology a touch more and determine a way that it could produce data. Since your technology was patented during the age of mechanical reproduction, it probably did not output data in digital form. (Please correct me if I'm mistaken. I likely am.) But if it could, then what sort of data would it create? When? Where? For whom? Under what assumptions? And to what effects on everyday users? For instance, would the technology encourage play? Gamify an activity? Increase productivity? Increase leisure time? Improve quality of life? Automate a particular task? Control or regulate a particular process? Feel free to imagine negative, positive, or mixed results. Once you've answered these questions, please prototype a "datified" version of your old technology. The prototype should include the following: an example or instance (such as an illustration, model, or physical object) of your datified old tech, some sample data (which can be generated manually), and a data model (which could be expressed through a spreadsheet, diagram, or even code). (Bonus points if you automate the production of your data.) When you are finished researching and prototyping, use ~400 words to communicate what you learned about labour, play, or control (pick one) from the prototyping process. Be sure to log your research and prototyping as you progress through the module (from 19 Oct to 2 Nov). Include in the log some documentation of the process (e.g., photographs, sketches, audio,

and/or video) as well as notes from the workshops, lectures, and assigned readings, games, film, and web materials.

MODULE 4: Speculation, Change, Responsibility

Speculation often involves imagining alternatives and other worlds, landscapes, and conditions. It is also used to craft fictions that comment on the present moment. How might it apply to the production of new or hypothetical technologies, not so much for the purposes of innovation or "disruption," but to consciously engage social and cultural issues? Or, from another perspective, how might it stress the aesthetic and political dimensions of technologies in the face of efficiencies?

KEYWORDS: AfroFuturism (Alondra Nelson and Ishmael Reed), anthropocene (Donna Haraway and McKenzie Wark), counterfactuals (Mark Sample), craft (Leah Buechley), decolonization (Ellen Cushman and micha cárdenas), forgery (Thomas J. Wise), futures (Damian White), manifesto (Jo Guldi), modern Prometheus (Mary Shelley), posthuman (N. Katherine Hayles), retrocomputing (Quinn DuPont), science fiction (Darko Suvin and Octavia Butler), social justice (Amanda Phillips), speculative design (Anthony Dunne and Fiona Raby), speculative fiction (Margaret Atwood), survivance (Gerald Vizenor), utopia (Fredric Jameson), and vapourware (Geert Lovink)

PROTOTYPING TECHNIQUE: Speculative Design

M 6 NOV: Peruse [The Extrapolation Factory](#) | Play (before class) games by [Elizabeth LaPensée](#) | Listen (before class) to [Quazarz: Born on a Gangster Star](#) (Shabazz Palaces) or watch them [live](#) | Watch (during class) [The Last Angel of History](#) (John Akomfrah) | Lecture: Immediate and Long Views

R 9 NOV: Read (before class) ["The Ones Who Walk Away from Omelas"](#) (Ursula K. Le Guin) | Lecture: Realism and Idealism in Speculative Design | Workshop: Foregrounding Values when Imagining a Device (Wireframing and Design Briefs)

M 20 NOV: Read (before class) ["Finding Faultlines: An Approach to Speculative Design"](#) (Kari Kraus) | Listen (before class) to ["Being Siri"](#) (Erin Anderson) | Lecture: Subjunctive Practices across Media | Workshop: From "What If . . . ?" to Responsibility

R 23 NOV: Watch (before class) [Transformers: The Premake \(a desktop documentary\)](#) (Kevin B. Lee) | Research and Develop Your Fourth Prototype (before and during class) | Workshop: Polishing a Speculation, or Refining a Possible Future | Discussion: Preparing for Your Final Presentations and Final Exam

M 27 NOV: Finish Your Fourth Prototype (before and during class) | Discussion: How Did It All Go?

R 30 NOV: Final Presentations | Submit Your Log for Assessment

LOG FOR MODULE 4 (9 Nov - 30 Nov): You're almost done. For your final prototype, I'm leaving most of the parameters to you. You should now have three prototypes based in a single technology: a 3-D form, a design scenario, and a datified machine

from the age of mechanical reproduction. This prototype should build on your work throughout the term by re-imagining your technology as an intervention in (or engagement with) a particular social or cultural issue. While it's tempting to approach this exercise from an instrumentalist perspective, I encourage you to treat your technology as a practice, or as congealed labour, involving human and nonhuman elements. What practices do you and/or others want to see in the world? How might your technology facilitate, shape, accelerate, mediate, or otherwise influence those practices? You can decide how to present this new technology in your log. For instance, you could produce a sketch, wireframe, model, video, code, or functioning prototype. I only ask that some "core" element of the original technology (or how the mechanism turned this into that) remain at play in your speculation. Together with your prototype, please use ~400 words to write a speculative design brief about your technology's approach to change and responsibility. Be sure to log your research and prototyping as you progress through the module (from 9 Nov to 30 Nov). Include in the log some documentation of the process (e.g., photographs, sketches, audio, and/or video) as well as notes from the workshops, lectures, and assigned readings, games, films, sounds, and web materials.



~ THE END ~