

# Human Behaviour, Health & Social Technologies

Thursdays 3:05pm-5:45pm, C630



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**OFFICE HOURS: Wednesday 2:30-4:30pm or by appointment**

## What will we be doing?

Happy New Year, and welcome to Human Behaviour, Health and Social Technologies. I look forward to a stimulating, productive and engaging semester. In this course, we'll be considering a number of topics that all relate, broadly speaking, to human health and well-being. The use of the term 'social technology' has a specific meaning in sociology and science and technology studies, but in this course, I use the term quite simply to refer to the way that human-made artifacts of various kinds influence human behaviour and health. Humans are distinctive in their use of cultural practices and technology to transform the world around them, usually with the aim of improving our living conditions and increasing human capacity. These innovations also tend to have unintended, unforeseen consequences. In this class, we will be discussing a variety of such transformations, looking at both the pros and cons, and considering how these relate both to psychology as a feature of human beings, and psychology as an academic, scientific discipline.

## How will we do this?

The course is seminar-based, and we will meet each Thursday to discuss the assigned readings for the week. These are drawn from the primary literature, comprising both review articles and empirical research papers. In addition, there may be some more journalistic pieces that add background or context to a given topic. One reason for giving you the primary literature to read is because this is a skill that improves with practice, and one that, as a recent paper argues, requires structured support for more junior researchers (Hubbard and Dunbar 2017). My aim here is to provide such support, and help you gain competence, and perhaps even proficiency, in your reading.

Hubbard KE, Dunbar SD (2017) Perceptions of scientific research literature and strategies for reading papers depend on academic career stage. *PLoS ONE* 12(12): e0189753. [https:// doi.org/10.1371/journal.pone.0189753](https://doi.org/10.1371/journal.pone.0189753)

In addition, the link below takes you to a guide to reading scientific papers for non-scientists by Jennifer Raff, which is fantastically useful. Use this to guide your reading and provide written (or even drawn!) summaries of the assigned papers as Jennifer suggests, which you will hand in each week following the relevant discussion.

<https://violentmetaphors.com/2013/08/25/how-to-read-and-understand-a-scientific-paper-2/>

Each week, for the first 1.5 hours of class you will be divided into two groups. Each group will discuss the papers for the week, raise any relevant questions, and solve any problems related to understanding or interpreting the papers. One group will be guided by me, and the other by one of my graduate students. After a short break, we will reconvene for the final hour or so of class, where we will compare and contrast the discussions that took place in each group. Every two weeks, group composition will be changed, so that you'll continually encounter a different mix of people across the semester.

## How will my efforts in class be assessed?

You will be assessed continuously throughout the semester. There is NO final exam.

### 1. Reading Summaries:

In order to ensure you stick to the reading schedule, each week you will write a summary (1-2 pages minimum) of the assigned readings. Reading closely and writing

clearly are skills that improve with practice; this is much more important than possessing any inherent talent (assuming such a thing even exists). The more you read and the more you write, the better you will be at both. I can say this quite categorically, and without any hesitation. If you need any help with these (or any of the other assignments) please don't hesitate to ask: the aim is for all assessment to be as formative as possible—i.e., geared to helping you improve as you go along—and not purely summative. To aid in this, you'll hand in your summaries each week at the end class. I'll then read over the summaries, and potentially make comments or offer suggestions for further reading or things to think about, and hand them back the following week. If your summary is not satisfactory for any reason (e.g., you've misunderstood something, or it lacks the detail needed so that I can see whether or not you have fully grasped the issue) then you will be able to rewrite the summary (or more likely add to the one you have, or rewrite only part of it). In this way, we can both ensure you have a complete set of satisfactory summaries by the end of the semester.

#### **Summaries will be assessed as follows:**

If you successfully and satisfactorily complete all summaries across the semester you will receive **30% of your grade on a pass-fail basis** (i.e., you must hand in a complete set to receive the grade, or else you will fail this component of the course).

**An additional 20% of your grade will be awarded on the basis of the quality of your summaries** (e.g., the amount of detail included, original insights, connections across readings and across topics, whether you discuss readings in addition to those required each week).

## **2. Research Paper on a Topic of Your Choosing**

You can choose any topic you like, including those on the syllabus. **This will count toward 25% of your final grade.** You will be given the opportunity to rewrite your essays based on the feedback you receive, and hence to improve your grade. More details on this will be given in class but, in brief, as this is a smaller class, you can hand in a draft for comments whenever you see fit during the semester, and do so as many times as you would like.

**IMPORTANT:** you should note that merely 'cosmetic' revisions (i.e., improvements to spelling and grammar alone, with no attempt to revise content), are unlikely to receive a higher mark.

## **3. Oral Presentation**

Finally, you will make a 5-minute presentation, followed by a two minute Q & A period, based on your chosen research topic. Presentations will take place in class time

during the last two weeks of the semester. **The presentation will count toward 25% of your final grade.** You will be provided with guidelines for your presentation, and the criteria on which your oral presentation will be assessed, closer to the time.

## Due Dates:

Summaries are due **EVERY WEEK** in class (50% of overall grade).

Final deadline for research paper (25% of overall grade): **March 28th.**

Presentation dates (25% of overall grade): **March 28th** and **April 4th**

## A note on formatting:

Your papers do not have to conform to any specific format (e.g., APA). Simply ensure they are printed double-spaced (to aid with editing) in a sensible, legible font; that your name is clearly shown on the front page; use in-text citations of the form Author (date), and ensure that all sources used are fully referenced at the end of the paper, using this format:

Other, A.N. (date) Title of article. Journal Title Vol. No: Page numbers.

Other, A.N. (date) Title of book. Publisher, Publisher Location.

Other, A.N. (date) Title of book chapter. (Title of book, Editors), Publisher, Location.

## Grading:

Final letter grades for the course will be determined using the following scheme:

A+	91-100	C+	67-69
A	85-90	C	63-66
A-	81-84	C-	60-62
B+	77-80	D+	56-59
B	73-76	D	50-55
B-	70-72	F	<50

# Basis of grading for written assignment:

**To get an A-grade your assignment should have:**

- a clear statement of the issue at hand and clear organization
- adequate support and reasoning for its claims
- be interesting and thoughtful
- show logical transitions within and between paragraphs that contribute to a fluent style of writing.
- make a cogent and logical argument
- have few, if any, mechanical, grammatical, spelling, or diction errors.
- demonstrate a command of language in a clear and direct manner.
- uses sources and examples intelligently, correctly, and fairly.

**B-grade assignments share most characteristics of the above but:**

- may have some minor lapses in organization and the development of its argument.
- may lack appropriate or adequate evidence for some of its claims.
- may contain some sentence structures that are awkward or ineffective.
- may have minor mechanical, grammatical, or diction problems.
- may be less distinguished in the use of language.
- may make some good points but not really provide any significant insights.

**C-grade assignments will show the following, compared to a B-grade assignment :**

- may have a weaker thesis and less effective development of ideas and examples.
- may contain some lapses in organization.
- may contain shifts in voice that make the essay harder to follow.
- may have poor or awkward transitions within or between paragraphs.
- may have less varied sentence structures that tend toward monotony.
- may have more mechanical, grammatical, and diction problems.
- may use sources in ways that are inappropriate or awkward.

**D-grade or Failed assignments are seriously flawed. They are likely to:**

- have no clear thesis or central topic.
- display random organization.
- lack adequate support or specific development.
- include irrelevant details.
- fail to fulfill the assignment or be unfairly brief.
- contain major and repeated errors in diction, syntax, grammar, punctuation, or spelling.
- plagiarize. The policies governing student conduct can be found on pages 63 to 68 of the University Calendar; a useful guide to avoiding plagiarism may be found on the Library's website at <http://www.uleth.ca/lib/guides/plagiarism.asp>.

# Seminar Dates and Topics:

Date	Topic
January 10th	<p><b>Introduction to the course</b></p> <p>Course structure, assessment and any questions answered.</p>
January 17th	<p><b>What are social technologies?</b></p> <p>This week we'll discuss two popular press articles that consider the effects of technological innovation on two very different aspects of human health, behaviour and cognition.</p>
January 24th	<p><b>AI, Ethics and Social Media</b></p> <p>The impact of social media on human well-being and psychology use has long been debated. The ethical implications of social media use are also increasingly in the news. Here, we consider the latter issue in some detail but, as you read the articles, you should consider the likely impact of these findings on the former set of concerns.</p>
January 31st	<p><b>Enhancement &amp; the Quantified Self</b></p> <p>Humans are “natural-born cyborgs” according to the philosopher Andy Clark: we extend the capacity of our biological brains through the use of various tools and artifacts. In Clark’s view, we should consider this to be a fundamental part of what it means to be human. This week, we consider the issues of “cosmetic neurology”—the use of pharmacology to enhance human cognitive capacities— and how various forms of digital algorithms and wearable technology allow us to monitor and assess our own health-related behaviours. How will this change our ideas of what it means to be human? We’ll also consider notions of ethics and justice: who gets to use such technologies? Who decides whether such enhancements are fair? Are they open to abuse? Who benefits ultimately?</p>

Date	Topic
February 7th	<p><b>Designer Babies?</b></p> <p>The introduction of assisted reproductive technologies (ART) has (inevitably, some would say) led to the rise of selective reproductive technologies (SRT): the idea that parents should have the capacity to choose embryos, not only to avoid certain inherited diseases and conditions, but also to actively select for certain preferred characteristics. This week, we ask: should prospective parents feel a moral obligation to produce the best child with the best chance at life? Or is this eugenics all over again, a new “reproductive dystopia”?</p>
February 14th	<p><b>Social Life and Health</b></p> <p>Humans are a social species, as are all anthropoid primates. Without a social world, we would fail to develop into human persons at all. Social isolation is known to be harmful to our physical and mental health in all kinds of ways. But how exactly does the social world exert an impact on human psychological health and well-being? And is it really possible to die of loneliness?</p>
February 21st	<p><b>READING WEEK - NO CLASSES</b></p>
February 28th	<p><b>Climate Change, Behaviour and Health</b></p> <p>The human impact on the earth has now been so profound that there are calls to name a new geological epoch, the Anthropocene. Climate change is one clear manifestation of human activity. This week we will consider the likely impacts of climate change on human health and behaviour, as well as thinking about why it seems so hard to take actions to reduce or ameliorate its effects. Can understanding why it’s so hard to change individual human health behaviour provide some insights?</p>

Date	Topic
March 7th	<p data-bbox="441 275 971 323"><b>Is Addiction a Disease?</b></p> <p data-bbox="441 348 1409 1031">The notion that addiction is a disease of the brain is now well established, and most federally-funded research efforts take this as a given. There is, however, resistance to this designation in some quarters. Dissenters argue that a disease model medicalizes a problem whose origins lie elsewhere, and that thinking in disease terms is actively misleading. For example, some people can overcome their addiction because they have decided to take action, but one cannot simply decide not to have cancer or Parkinson’s disease, nor can one literally catch addiction from others, in the way we catch the ‘flu. The changes in the brains of addicts may also be a consequence of substance-abuse, and not the cause of the addiction itself. Critics therefore suggest addiction is an example of learned, compulsive behaviour that develops over time, and argue that addiction is largely a social problem that needs social solutions, not medical ones. This week, we will discuss this debate in the context of the ongoing opioid crisis in North America.</p>
March 14th	<p data-bbox="441 1066 1373 1115"><b>“Old Friends”: the Microbiome &amp; Health</b></p> <p data-bbox="441 1140 1409 1738">Public health initiatives to provide clean water, food standards, and vaccinations against infectious disease, along with inventions like pasteurization and refrigeration, have transformed the human life course. Many of us now live longer lives than ever before. There are some diseases, however, that have increased in prevalence even as public health programs have flourished. This week, we’ll discuss the idea that this occurs we’re now keeping ourselves too clean, and hence lack exposure to infection and microbes in our environment. It is also becoming apparent that the human microbiota—the bacterial populations that live on our skin, in our stomachs, and occupy our various mucus membranes—influences our health, and perhaps even our brains and cognition, in a variety of non-obvious ways. Once again, certain initiatives designed to increase human health may have unintended negative consequences.</p>

Date	Topic
March 21st	<p><b>Placebo Effects or “Meaning Effects”?</b></p> <p>The origin of the word placebo comes from the Latin “I shall please” — they are substances given to please the patient, rather than the doctor. Placebos are inert and can have no possible medical benefit, and yet people often recover when given a placebo rather than an active drug. Why is this? This week we discuss what we know about the placebo effect, and consider an alternative hypothesis: that the beneficial effects lie in the meaning that people extract from particular medical procedures, and in the meaningful social interactions that take place between patients and doctors.</p>
March 28th	<p><b>Class presentations</b></p> <p>For the last two weeks of class, we get to hear about your own research into any and all aspects of health, human behaviour and social technologies.</p>
April 4th	<p><b>Class presentations</b></p>

# Reading List and Due Dates:

Readings assigned on:	Readings
January 10th  <b>Due: Jan 17th</b>	<p>Twilley, N. (2017) A pill to make exercise obsolete. The New Yorker, Nov. 6th. <a href="https://www.newyorker.com/magazine/2017/11/06/a-pill-to-make-exercise-obsolete">https://www.newyorker.com/magazine/2017/11/06/a-pill-to-make-exercise-obsolete</a></p> <p>Wolf, G. (2010) The data-driven life. New York Times Magazine. <a href="https://www.nytimes.com/2010/05/02/magazine/02self-measurement-t.html">https://www.nytimes.com/2010/05/02/magazine/02self-measurement-t.html</a></p>
January 17th  <b>Due: Jan 24th</b>	<p>Kramer, A.D.I., Guillory, J.E. &amp; Hancock, J.T. (2014) Experimental evidence of massive-scale emotional contagion through social networks. <i>Proceedings of the National Academy of Sciences</i> 111: 8788-8790.</p> <p>Fransen, M.L., Verlegh, P.W.J., Kirmani, A., &amp; Smit, E.G. (2015) A typology of consumer strategies for resisting advertising, and a review of mechanisms for countering them. <i>International Journal of Advertising</i> 34: 6-16.</p> <p>Broniatowski, D.A. et al. (2018) Weaponized health communication: Twitter bots and Russian trolls amplify the vaccine debate. <i>AJPH</i> 108: 1378-1384.</p>

Readings assigned on:	Readings
<p>Jan 24th</p> <p><b>Due: Jan 31st</b></p>	<p>Heersmink, R. (2017) Extended mind and cognitive enhancement: moral aspects of cognitive artifacts. <i>Phenomenology and the Cognitive Sciences</i> 16:17–32. DOI 10.1007/s11097-015-9448-5.</p> <p>Chatterjee, A. (2006) The promise and predicament of cosmetic neurology. <i>Journal of Medical Ethics</i> 32:110–113. doi: 10.1136/jme.2005.013599.</p> <p>Lupton, D. (2013) Quantifying the body: monitoring and measuring health in the age of mHealth technologies. <i>Critical Public Health</i> 23 393-403. doi:10.1080/09581596.2013.794931.</p> <p><b>Optional:</b></p> <p>Altman, A. (2018) The unlikely politics of a digital contraception. <i>The New Yorker</i>, October 2nd. <a href="https://www.newyorker.com/tech/annals-of-technology/the-unlikely-politics-of-a-digital-contraceptive">https://www.newyorker.com/tech/annals-of-technology/the-unlikely-politics-of-a-digital-contraceptive</a></p> <p>Caplan, A. L., &amp; McHugh, P. R. (2004). Straining Their Brains: Why the Case Against Enhancement is Not Persuasive. <a href="http://repository.upenn.edu/neuroethics_pubs/29">http://repository.upenn.edu/neuroethics_pubs/29</a></p>

Readings assigned on:	Readings
<p>Jan 31st</p> <p><b>Due: Feb 7th</b></p>	<p>Anomaly, J. (2018)Defending eugenics: from cryptic choice to conscious selection. <i>Monash Bioethical Review</i> 35: 24-35.</p> <p>Roberts, D. (2009) Race, gender and genetic technologies: a new reproductive dystopia? <i>Signs</i> 34: 783-804.</p> <p>Gammeltoft, T.M. &amp; Wahlberg, A. (2014) Selective Reproductive Technologies. <i>Annual Review of Anthropology</i> 43: 201-216.</p> <p><b>Optional:</b></p> <p>Sandel, M. (2004) The case against perfection:What's wrong with designer children, bionic athletes, and genetic engineering. <i>The Atlantic Monthly</i>. <a href="https://www.theatlantic.com/magazine/archive/2004/04/the-case-against-perfection/302927/">https://www.theatlantic.com/magazine/archive/2004/04/the-case-against-perfection/302927/</a></p>
<p>February 7th</p> <p><b>Due: Feb 14th</b></p>	<p>Miller, G., Chen, E. &amp; Cole, S.W. (2009) Health psychology: developing biologically plausible models linking the social world and physical health. <i>Annual Review of Psychology</i> 60:501–24.</p> <p>Ellis, B.J. &amp; Del Giudice, M. (2019) Developmental adaptation to stress: an evolutionary perspective. <i>Annual Review of Psychology</i> 70: 1-15.</p> <p>Holt-Lunstad, J. et al. (2015) Loneliness and social isolation as risk factors for mortality: a meta-analytic review. <i>Perspectives on Psychological Science</i> 10: 227-237.</p>

Readings assigned on:	Readings
February 14th  <b>Due: Feb 28th</b>	<p>Evans, G.W. (2019) Projected behavioural impacts of global climate change. <i>Annual Review of Psychology</i> 70: 6.1-6.26.</p> <p>Wynes, S. &amp; Nicholas, K.A. (2017) The climate mitigation gap: education and government recommendations miss the most effective individual actions. <i>Environmental Research Letters</i> 12: 074024</p> <p>Kelly, M. P., &amp; Barker, M. (2016). Why is changing health-related behaviour so difficult? <i>Public health</i> 136: 109-116.</p>
February 28th  <b>Due: March 7th</b>	<p>Volkow, N.D. (2016) Neurobiologic advances from the brain disease model of addiction. <i>New England Journal of Medicine</i> 374: 363-371.</p> <p>Lewis, M. (2017) Addiction and the brain: development, not disease. <i>Neuroethics</i> 10: 7-18.</p> <p>Venniro, M., Zhang, M., Caprioli, D., Hoots, J. K., Golden, S. A., Heins, C., ... &amp; Shaham, Y. (2018). Volitional social interaction prevents drug addiction in rat models. <i>Nature Neuroscience</i> 21(11): 1520.</p> <p><b>Optional:</b>            McGreal, C. (2018) The making of an opioid epidemic. <i>The Guardian</i>, November 8th.  <a href="https://www.theguardian.com/news/2018/nov/08/the-making-of-an-opioid-epidemic">https://www.theguardian.com/news/2018/nov/08/the-making-of-an-opioid-epidemic</a></p> <p>Talbot, M. (2017) The addicts next door. <i>The New Yorker</i>.  <a href="https://www.newyorker.com/magazine/2017/06/05/the-addicts-next-door">https://www.newyorker.com/magazine/2017/06/05/the-addicts-next-door</a></p>

Readings assigned on:	Readings
<p>March 7th</p> <p><b>Due: March 14th</b></p>	<p>Allen, A. P., Dinan, T. G., Clarke, G., &amp; Cryan, J. F. (2017). A psychology of the human brain–gut–microbiome axis. <i>Social and personality psychology compass</i>, 11: e12309.</p> <p>Greaves, M. (2018). A causal mechanism for childhood acute lymphoblastic leukaemia. <i>Nature Reviews Cancer</i>, 1.</p> <p>Mueller, N. T., Bakacs, E., Combellick, J., Grigoryan, Z., &amp; Dominguez-Bello, M. G. (2015). The infant microbiome development: mom matters. <i>Trends in molecular medicine</i> 21: 109-117.</p>
<p>March 14th</p> <p><b>Due: March 21st</b></p>	<p>Price, D. D., Finniss, D. G., &amp; Benedetti, F. (2008). A comprehensive review of the placebo effect: recent advances and current thought. <i>Annual Review of Psychology</i> 59: 565-590.</p> <p>Moerman, D. E., &amp; Jonas, W. B. (2002). Deconstructing the placebo effect and finding the meaning response. <i>Annals of Internal medicine</i> 136: 471-476.</p> <p>Brien, S., Lachance, L., Prescott, P., McDermott, C., &amp; Lewith, G. (2010). Homeopathy has clinical benefits in rheumatoid arthritis patients that are attributable to the consultation process but not the homeopathic remedy: a randomized controlled clinical trial. <i>Rheumatology</i> 50: 1070-1082.</p>