

Law and Neuroscience

CML 4114 [JN]

DCL 5121 [JN]

January Term 2018

Instructor: Roland Nadler

SYLLABUS

Classes:

Mon, Tues, Thurs, Fri 13:00-16:00 FTX 401
Weds 13:00-16:00 FTX 137

Instructor Contact

Office:

Room 329, Brooks Building (through the door marked
“Health Law” near the elevator/stairs)

E-mail:

rnadler@uottawa.ca

Office Hours:

By appointment, plus walk-in hours TBD during term

Required Materials:

All of the reading material you are responsible for in this course is **available via open-access hyperlinks** contained in this syllabus.

Course Description:

This seminar examines the legal, ethical, societal, and philosophical questions that flow from our fast-burgeoning scientific understanding of — and technological power to intervene with — the human brain. We will explore the challenges posed to foundational moral and legal concepts by a brain-based conception of human behavior, while also canvassing the practical realities of neuroscientific evidence and arguments as encountered by attorneys in the U.S. and Canada with increasing frequency. Topics will include: the detection of memory, deception, or pain using neuroimaging ("brain scans") and its implications for mental privacy; the neuroscience of criminal culpability; the use of drugs and devices to enhance brain function; the promise and peril of behavioral prediction methods; and the psychology of juror and judicial decision-making — among many other compelling issues in neurolaw and neuroethics. Throughout, we will revisit a central concern: in what ways is the significance of neuroscience for the law oversold, and in what ways is it undersold?

The course will take the form of a discussion-driven seminar. You are expected to digest the assigned readings and come to class sufficiently prepared to contribute to our nearly three-hour sessions. The length of our class sessions necessitates a reading-intensive workload; you should budget time to work through as many as 100 pages for some class sessions, though with the reassurance that at least some of those pages will be designated as material to skim rather than read closely.

No scientific background is required for this course, which will be accessible to all those with an interest in the conceptual underpinnings of Anglo-American legal systems as well as the practical questions that come up every day in courts across Canada and the United States. To the extent that readings and examples deal with the U.S. legal system, no familiarity is assumed or required and all necessary background for understanding will be provided. Because a great deal of existing neurolaw scholarship is concerned with American law, our focus will be on bigger-picture issues rather than doctrinal specifics, but readings will nonetheless run a wide gamut between practical and philosophical.

A Note on Materials:

This class was built around the casebook *Law and Neuroscience* (Jones, Schall, & Shen, eds., 2014). It is not a required text. I have made a copy of the casebook available on reserve at the Dickson Law Library, and I have denoted on the syllabus where class sessions track certain casebook chapters via the abbreviation **JSS**. I encourage you to consult the reserve copy whenever you feel you need more guidance and context for the readings. If you plan to make neurolaw an ongoing academic or practice focus, I highly recommend investing in a copy for yourself.

Evaluation Method:

The weighting and frequency of the evaluations for this course will vary depending on whether you choose to undertake a Regular Paper or a Major Paper:

(40%) Regular Paper	Major Paper (50%)
(30%) Attendance and participation	Attendance and participation (30%)
(30%) Three Discussion Commentaries	Two Discussion Commentaries (20%)

Expectations for the Regular Paper:

This is the default paper option for this course. Your paper should be in the range of **3,500 to 5,000 words**, inclusive of footnotes. With regard to font, page setup, citation form, and the like, make use of a reasonably standard and readable style that you would feel comfortable submitting as work product to a court or an employer. Prompts, expectations, and submission instructions for the Regular Paper will be distributed and posted before the add/drop date of January 5. The Regular Paper, like the Major Paper, is **due by 4:00pm on Monday, January 22, 2018**.

Expectations for the Major Paper:

This option requires instructor approval. Major Papers range in length from **5,000 to 10,000 words**. The expectations for a Major Paper are high. It must address an original and challenging topic pertinent to the course, which in turn will necessitate outside reading and research in order to develop and support a novel thesis. Its central contention should be clear, specific, and sufficiently narrow to allow for comprehensive treatment while also sufficiently ambitious to merit the undertaking. The Major Paper should reflect thoughtful engagement with relevant extant sources on the topic of choice; an otherwise good paper written in ignorance of the current state of the law or the literature will fare poorly. Writers of Major and Regular papers alike should signal pride in their work by taking care to avoid lapses in clarity, organization, grammar, spelling, and citation form.

Writers of both Major and Regular papers are expected to demonstrate familiarity with and strictly adhere to the rules regarding academic integrity. Reference and attribute your writing as though you plan on publishing it. (You might, after all.) If you are unclear on the rules for plagiarism, see the references on the next page to the University of Ottawa's policies on the subject, or contact me.

The challenge of a Major Paper is heightened in this case by the extreme timetable of the January Term. I will not impose a strict schedule on your topic choice, development, and completion of the paper other than the University-mandated Major Paper **registration deadline of January 12** and the similarly mandatory **final-product due date of 4:00pm on Monday, January 22, 2018**.

However, **I may decline to approve your request to write a Major Paper in the first place if I determine it is too late** for you to begin, even if you request before January 12. Bear in mind our five-weekday course schedule and the mere three weekends on the January term calendar. It would be safest to obtain approval before the first weekend so that you can immediately refine your topic and thesis and devote the second and third to writing. You are encouraged to contact me to schedule an appointment to discuss your paper topic or progress.

Expectations for class attendance and participation:

This class is built around seminar-style discussion rather than lectures. Not only will absences hurt your own grade, they will deprive your classmates of the most robust and worthwhile discussion possible. With only thirteen class sessions, even a few absences without good cause will result in steep cuts to the 30% participation credit.

With regard to participation, because the topics covered routinely expose deep normative and theoretical tensions in the law, we will focus intently on identifying and thoughtfully debating those tensions amongst ourselves; accordingly, be prepared for me to ask you to interrogate or defend positions for which you or other students voice support or scepticism. Understandably, not every person is naturally inclined to speak up in a discussion, but in the spirit of lawyerly skill development I urge you to make an appreciable effort. As a safeguard for the more reticent among us, the Discussion Commentary assignments are designed to commit you to an articulable view on readings of your choice, and thereby help you earn your participation grade.

Expectations for Discussion Commentary assignments:

A total of three times during the class (two times for Major Paper writers), you are expected to write a **commentary of no fewer than 300 words** reacting to one of the upcoming class session's assigned readings. **You may not submit more than one Discussion Commentary per class session, and you may not submit more than two in any given calendar week.**

To obtain full credit on these commentaries you must not merely provide summary or exegesis, but offer analysis and take a position. You are not limited to simply agreeing or disagreeing with the reading as a whole; you may extend or qualify its ideas, or apply or adapt them to a topic or context that interests you, among many other options. **You should consider yourself "on panel" for the class sessions whose readings serve as the basis for your Discussion Commentaries;** this does not mean that you will be made to present or explain the reading, but you should expect to field questions and discussion prompts based on your written work.

Discussion Commentaries should be submitted to me via email (rnadler@uottawa.ca) no later than 10:00am on the day of the class session to which the chosen reading pertains, and should not be submitted more than 24 hours in advance of that class. Please also turn in a printed copy of your commentary in class on that day. You need not format your commentary in any particular fashion, but you should still treat the exercise as work product and complete it with care. Each Discussion Commentary is worth an equal portion of the overall assignment credit (thus each is 10% of your grade no matter which evaluation method you go with). I have no expectation that any commentaries will be submitted for the first day of class, but if you wish to, feel free.

Other Rules Pertaining to Evaluation:

1. All requests for extensions, as provided for in the Faculty Regulations, must be processed through the office for Academic Affairs. I am without discretion to deviate from the standard policy providing that every day (or partial day, including weekends and holidays) of lateness in the submission of an assignment amounts to a 10% reduction in grading credit for that assignment.
2. A brief note on language accommodation: as a visiting scholar from the United States, I bring with me both great respect for the University of Ottawa's bilingualism and my own regrets that when it comes to high-level academic fluency, I can only offer this course's discussion component in English. Students wishing to submit their Regular or Major Paper in French are encouraged to contact me as early as possible so that we can work towards an administrative arrangement honouring their right to do so. It bears noting that students who write their papers in English may find that their opportunities to adapt their work into law review or academic journal submissions are substantially improved.
3. For your reference, the University's brochure on plagiarism is available at <http://www.uottawa.ca/plagiarism.pdf>, and information regarding academic fraud at <http://www.commonlaw.uottawa.ca/en/list/academics-affairs/academic-fraud>. Cases of academic fraud will be referred to the University disciplinary process, which carries a number of potential downstream penalties.
4. You are permitted to opt for Satisfactory / Non-satisfactory grading in this course, per <https://commonlaw.uottawa.ca/en/students/programs/overview/january-term-information>.
5. University regulation 9.0 on feedback prior to the drop period does not apply to this course because of the timing of the law school's drop/add period early in the academic term.

Accommodations:

Generally:

To request an assignment extension or other accommodation, please contact Common Law Professor's Support Office at clawaccess@uottawa.ca or at 613-562-5800, ext. 7158. Circumstances that may warrant accommodation include but are not restricted to: a permanent state of affairs (e.g., a disability, a permanent medical condition); an ongoing situation (e.g., a personal crisis, pregnancy); reasons related to equity concerns (e.g., religious obligations, sole parenthood); a one-time event or circumstance (e.g., a short illness, a temporary injury, a day surgery); or compassionate grounds (e.g., a death in the family, a sick child or dependent). Students should consult the Equity and Academic Success portion of the Common Law Professor's Support Office website for complete details regarding accommodation requests.

Disability Accommodation:

Students who require accommodations or academic support because of a physical or learning disability, or any condition that affects their ability to learn, are invited to register with ACCESS SERVICE, located at UCU 339 (tel. 613.562.5976; TTY 613.562.5214; email adapt@uottawa.ca). More information is at www.sass.uottawa.ca/access.

Students can meet with an Access Service specialist to identify their individual needs and to discuss appropriate strategies. All information provided to Access Services and all accommodations received remain strictly confidential. Bear in mind the abbreviated length of the January term and ensure any needed accommodations are requested as far in advance as possible. For additional information about Access Services you may contact Jessica Simon in Student Services at jsimon@uottawa.ca or at 613.562.5800 x 8891.

Religious Accommodation:

Accommodations will be made to allow students to observe their religious obligations. Students should contact the Manager, Equity and Academic Success no later than three weeks before the religious holiday in question, unless otherwise instructed by their professor. The University of Ottawa is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates relating to assignments for this course pose such a conflict for you, please let me know within the first three days of class.

Classroom Policies:

I am committed to providing a safe, respectful, just, and inclusive classroom environment for all students, and to ensuring that this environment remains free from threats, intimidation, violence, harassment, and disrespect. I expect the full cooperation of all students in upholding this goal. In particular, I expect students to maturely negotiate the challenge of treating each other both as competing discussants in spirited intellectual exchange *and* as human peers who have legitimately personal stakes in issues. To the extent I need to act as moderator in maintaining that environment of respect, I expect everyone to adapt to the clarifying of rules with due professionalism and an understanding that my first responsibility is to minimizing harm to classroom norms of safety and inclusivity.

Additionally, the administration has promulgated, and I reiterate here, the following policy: “The University of Ottawa does not tolerate any form of sexual violence. Sexual violence refers to any act of a sexual nature committed without consent, such as rape, sexual harassment or online harassment. The University, as well as student and employee associations, offers a full range of resources and services allowing members of our community to receive information and confidential assistance and providing for a procedure to report an incident or make a complaint. For more information, visit www.uOttawa.ca/sexual-violence-support-and-prevention.”

As part of my commitment to the kind of classroom environment outlined above, I emphasize that I am always available and willing to be contacted with questions or concerns. Although I do not anticipate that any reading material requires special caution, this does include concerns about course content. Moreover, if at any time you feel the need to step outside during a class discussion you may always do so without fear of academic penalty.

Finally, the University has recommended that syllabi advise students of expectations regarding classroom etiquette. Professionalism in a seminar-style class environment takes a different form than in lecture-style courses but is no less important. In particular, I trust students to use their personal electronics judiciously to facilitate learning and minimize distraction, bearing in mind that interactive engagement with those around the table is the very substance of class participation. Consider what standards of conduct would prevail, and especially how electronic devices might appropriately be used, in professional settings like a meeting among counsel or a case conference in a judge’s chambers; similar common-sense rules apply in class.

Course Outline and Reading Assignments:

The topics and readings for this course are designed to maintain a smooth topical flow from one session to the next, with readings often equally pertinent to the previous or next day's theme. As a result, you will seldom regret reading ahead if you have the opportunity, and we will be at liberty to table certain readings for the next session.

Pay careful attention to underlined instructions next to readings, as they indicate where you are responsible for less than the entirety of that reading. Unavoidably, because many of these papers discuss the same scientific material, some of their content will become duplicative over time; I trust you to skim intelligently as needed where you are already familiar with what is being said.

You may find that copying and pasting these hyperlinks into a browser produces more reliable results than clicking on them. **If you ever have trouble with any of these links, please contact me and I will ensure that you are able to obtain a PDF one way or another.**

Overview & Scientific Background

There are two general, introductory background readings for this course. You are encouraged to complete them as soon as possible in the January term, or before then if you so desire.

- Henry T. **Greely** & Anthony D. **Wagner**, *Reference Guide on Neuroscience*, in *The Reference Manual on Scientific Evidence* (3d ed., 2012) (available at <https://www.nap.edu/read/13163/chapter/15>) (parts I-IV only)
 - **Presidential Commission** for the Study of Bioethical Issues, *Gray Matters: Topics at the Intersection of Neuroscience, Ethics, and Society* (Vol. 2) (2015) (available at https://bioethicsarchive.georgetown.edu/pcsbi/sites/default/files/GrayMatter_V2_508.pdf) (Ch. IV only)
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1. Brain Science & Criminal Responsibility, Philosophically

January 3 • JSS ch. 5

We begin with a veritable lightning rod of a paper and an equally stark counterpoint:

- Joshua D. **Greene** & Jonathan **Cohen**, *For the Law, Neuroscience Changes Nothing and Everything*, 359 Philosophical Transactions of the Royal Society of London B 1775 (2004) (available at <https://static.squarespace.com/static/54763f79e4b0c4e55ffb000c/t/5477cd91e4b01fb132f9be4c/1417137553194/for-the-law-neuroscience-changes-nothing-and-everything.pdf>)
- Stephen J. **Morse**, *Determinism and the Death of Folk Psychology: Two Challenges to Responsibility from Neuroscience*, 9 Minn. J.L. Sci. Tech. 1 (2008) (available at [https://www.law.upenn.edu/cf/faculty/smorse/workingpapers/9MinnJLSci&Tech1\(2008\).pdf](https://www.law.upenn.edu/cf/faculty/smorse/workingpapers/9MinnJLSci&Tech1(2008).pdf)) (you may skim part IV)

Next, a roundtable of philosophers and non-philosophers on free will:

- Jerry A. **Coyne**, *You Don't Have Free Will*, The Chronicle Review, March 18, 2012, at B6 (available at <https://www.chronicle.com/article/jerry-a-coyne-you-dont-have/131165>)
- Hilary **Bok**, *Want to Understand Free Will? Don't Look to Neuroscience*, The Chronicle Review, March 18, 2012, at B8 (available at <https://www.chronicle.com/article/hilary-bok-want-to-understand/131168>)
- Owen D. **Jones**, *The End of (Discussing) Free Will*, The Chronicle Review, March 18, 2012, at B9 (available at <https://www.chronicle.com/article/owen-d-jones-the-end-of/131169>)
- (optionally, check out the remainder of the Chronicle roundtable)

Finally, a proposal aimed at settling the debate:

- Nita A. **Farahany**, *A Neurological Foundation for Freedom*, 2012 Stanford Technology L. Rev. 4 (2012) (available at https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5322&context=faculty_scholarship) (we will only get to this paper in-class if time permits; consider it a recommended reading)
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2. Brain Science & Criminal Responsibility, Philosophically (cont'd)

January 4 • JSS ch. 5

We will build on all of the previous day's readings, and add:

- David **Eagleman**, *The Brain on Trial*, The Atlantic, Jul/Aug 2011 (available at <https://www.theatlantic.com/magazine/archive/2011/07/the-brain-on-trial/308520/>)
- Steven K. **Erickson**, *Blaming the Brain*, 11 Minnesota J.L. Sci. & Tech. 27 (2010) (available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1472245) (you may skim part II)

We will be returning to some of what Erickson talks about, and one of the authors he criticizes, later in the course, so bookmark it. Finally, for a Canadian perspective:

- Elizabeth O. **Bennett**, *Neuroscience and Criminal Law: Have We Been Getting It Wrong for Centuries and Where Do We Go From Here?* 85 Fordham L. Rev. 437 (available at <http://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=5237&context=flr>) (we will only get to this paper in-class if time permits; consider it a recommended reading)
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3. Brain Science & Criminal Responsibility, Practically January 5

We turn from high theory to brass tacks with readings on the criminal courtroom relevance of neuroscience, including a double dose of Canadian scholarship:

- Henry T. **Greely** & Anthony D. **Wagner**, *Reference Guide on Neuroscience*, in *The Reference Manual on Scientific Evidence* (3d ed., 2012) (available at <https://www.nap.edu/read/13163/chapter/15>) (skim part V, and read only part VI and VI.A, skip VI.B and VI.C)
 - Christopher **Slobogin**, *Neuroscience Nuance: Dissecting the Relevance of Neuroscience in Adjudicating Criminal Culpability*, __ *Journal of Law and the Biosciences* __ (2017) (available at <https://academic.oup.com/jlb/advance-article/doi/10.1093/jlb/lxx033/4617740>) (you may skim the section on Five Types of Neuroscience Evidence)
 - Jennifer A. **Chandler**, *The Use of Neuroscientific Evidence in Canadian Criminal Proceedings*, 2 *Journal of Law and the Biosciences* 550 (2015) (available at <https://academic.oup.com/jlb/article/2/3/550/1917954>) (though no specific section of this paper is entirely skimmable, you can generally focus on the results and discussion portions)
 - Steven **Penney**, *Irresistible Impulse and the Mental Disorder Defence: The Criminal Code, the Charter, and the Neuroscience of Control*, 30 *Crim. L. Quarterly* __ (2013) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2320628) (this paper is less dense than it seems; we will only get to it in-class if time permits, so consider it a recommended reading)
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4. Brain Science as Evidence January 8 • JSS ch. 6, 15

Be warned, the readings for this session are unusually lengthy. Each, however, has parts that can be skipped or skimmed.

- Teneille R. **Brown** & Emily R. **Murphy**, *Through a Scanner Darkly: Functional Neuroimaging as Evidence of a Criminal Defendant's Past Mental States*, 62 Stanford Law Review 1119 (2010) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1405371) (you may speed through Part II, though try to absorb as much as you can, and you may skim Part III)
- Owen D. **Jones**, Joshua Buckholtz, Jeffrey D. Schall, & René Marois, *Brain Imaging for Legal Thinkers: A Guide for the Perplexed*, 2009 Stanford Technology L. Rev. 5 (2009) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1563612) (do not skip the Appendix entirely; the annotations in it are the point of the reading, and the rest may be skimmed)

To close out and bridge into the next session, turn to our only (!) judicial opinion on the reading list:

- *United States v. Semrau*, 693 F.3d 510 (6th Cir. 2012) (available at <https://law.justia.com/cases/federal/appellate-courts/ca6/11-5396/11-5396-2012-09-07.html>) (you may of course skip parts II.B and onward)
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5. Lie Detection & Other Forms of Mindreading

January 9 • JSS ch. 15

First, an in-depth look at lie detection with two readings, one short and one longer:

- Paul S. **Appelbaum**, *The New Lie Detectors: Neuroscience, Deception, and the Courts*, 58(4) *Psychiatric Services* 460 (2007) (available at <https://ps.psychiatryonline.org/doi/pdf/10.1176/ps.2007.58.4.460>)
- Martha J. **Farah**, J. Benjamin Hutchinson, Elizabeth A. Phelps, & Anthony D. Wagner, *fMRI Lie Detection: Scientific and Social Challenges*, 15 *Nature Reviews Neuroscience* 123 (2014) (available at http://repository.upenn.edu/cgi/viewcontent.cgi?article=1119&context=neuroethics_pubs) (you may speed through pages 17 onwards)

Next, an article that despite its title is not so much about pain as about mindreading in the law more generally:

- Henry T. **Greely**, *Neuroscience, Mindreading, and the Courts: The Example of Pain*, 18 *J. Health Care Law and Policy* 171 (2015) (available at <http://digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1332&context=jhclp>) (you may skim part III)

Finally, to set up for the next session on privacy and autonomy, a look at a different sort of mindreading:

- Emily R. **Murphy**, Judy Illes, & Peter B. Reiner, *Neuroethics of Neuromarketing*, 7 *Journal of Consumer Behavior* 293 (2008) (available at <http://neuroethics.med.ubc.ca/files/2013/06/Murphy-2008-Journal-of-Consumer-Behaviour-1.pdf>)
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6. Mental Privacy, Autonomy, & Freedom of Thought

January 10

****GUEST LECTURE: Prof. Jennifer Chandler****

Prof. Chandler has kindly agreed to come in and talk about her paper on autonomy in the context of emerging neurotherapies and legal doctrine, so come ready to benefit from the discussion by reading:

- Jennifer A. **Chandler**, *Autonomy and the Unintended Consequences of Emerging Neurotherapies*, 6(2) *Neuroethics* 249 (2013) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1805780)

Either before or after our guest session, we'll focus in on privacy. This session will tee up some themes regarding freedom of thought, but we will revisit those in greater depth toward the end of the course.

- Francis X. **Shen**, *Neuroscience, Mental Privacy, and the Law*, 36 *Harvard J. L. Pub. Policy* 653 (2013) (available at https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2269078) (you may skim through Parts I & III)
 - Adam J. **Kolber**, *Two Views of First Amendment Thought Privacy*, 18 *J. Constitutional Law* 1381 (2016) (available at <http://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1608&context=jcl>) (we will only get to this paper in-class if time permits; consider it a recommended reading)
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7. Memory: What It Is & What It May Be

January 11 • JSS ch. 13

Reflecting a duality seen often in neuroethics and neurolaw, we will first consider what our knowledge *about* the brain means for our current practices:

- Daniel L. **Schacter**, *The Seven Sins of Memory: Insights from Psychology and Cognitive Neuroscience*, 54(3) *American Psychologist* 182 (1999) (available at http://nwpsych.rutgers.edu/~jose/courses/578_mem_learn/2012/readings/Schacter_1999.pdf) (you may skim the final section from p. 196 onward)
- Daniel L. **Schacter** & Elizabeth F. **Loftus**, *Memory and Law: What Can Cognitive Neuroscience Contribute?* 16(2) *Nature Neuroscience* 119 (2013) (available at https://dash.harvard.edu/bitstream/handle/1/12561406/Schacter_MemoryLaw.pdf?sequence=1) (you may skim p. 13 onward)

And then we will consider what our ability to *intervene with* the brain means for our future:

- Adam J. **Kolber**, *Therapeutic Forgetting: The Legal and Ethical Implications of Memory Dampening*, 59 *Vanderbilt L. Rev.* 1561 (2006) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=887061) (depending on your interests, you can focus more on Part II or Part III of this article and speed through the other of the two)
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8. Detecting Pain, Conceptualizing Harm

January 12 • JSS ch. 12

Riffing on the themes from our Lie Detection session, particularly the Greely paper:

- Natalie **Salmanowitz**, *The Case for Pain Neuroimaging in the Courtroom: Lessons from Deception Detection*, 2 Journal of Law and the Biosciences 139 (2015) (available at <https://academic.oup.com/jlb/article/2/1/139/808680>)

Turning from the technology to the underlying concepts, we will cover parts of an absolutely massive law review article and a mid-length piece of legal philosophy with an absolutely massive URL:

- Francis X. **Shen**, *Mind, Body, and the Criminal Law*, 97 Minnesota L. Rev. 2036 (2013) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2274256) (focus on Parts I and II; you may skim or skip the rest)
 - Jan-Christoph **Bublitz** & Reinhard **Merkel**, *Crimes Against Minds: On Mental Manipulations, Harms and a Human Right to Mental Self-Determination*, 8 Criminal Law and Philosophy 51 (2014) (available at https://www.researchgate.net/profile/Reinhard_Merkel2/publication/259974877_On_Crimes_Against_Minds_On_Mental_Manipulations_Harms_and_a_Human_Right_to_Mental_Self-Determination/links/0c96052ecfa8540ad5000000/On-Crimes-Against-Minds-On-Mental-Manipulations-Harms-and-a-Human-Right-to-Mental-Self-Determination.pdf) (you may skim pp. 60-72; because we will revisit this topic later, you may prioritize the other two readings if time is short)
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9. The Political & Policy Implications of Neuroscience

January 15

For this session, in which we remind ourselves that law is not only what happens in courts, our point of departure is a comparatively short piece from syllabus regular Francis Shen:

- Francis X. **Shen**, *Legislating Neuroscience: The Case of Juvenile Justice*, 46 Loyola of Los Angeles L. Rev. 985 (2013) (available at <http://digitalcommons.lmu.edu/cgi/viewcontent.cgi?article=2869&context=llr>) (you may skim Part II)

Next, a look at perhaps the foremost issue where brain science seems to have implications not merely for policy but for politics:

- Martha J. **Farah**, Kimberly G. Noble, & Hallam Hurt, *Poverty, Privilege, and Brain Development: Empirical Findings and Ethical Implications*, in *Neuroethics: Defining the Issues in Theory, Practice, and Policy* at 277 (2005) (available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.192.27&rep=rep1&type=pdf>) (you may skim the section spanning pp. 15-20)

As something of a counterpoint, a bareknuckle and problematic but usefully provocative contribution from a U.S. judge:

- Morris B. **Hoffman**, *Neuroscience Cannot Answer These Questions: A Response to G. and R. Murrow's Essay Hypothesizing a Link Between Dehumanization, Human Rights Abuses, and Public Policy*, 3 *Journal of Law and the Biosciences* 167 (2016) (available at <https://academic.oup.com/jlb/article/3/1/167/1751236>) (and purely for reference, Murrow & Murrow available at <https://academic.oup.com/jlb/article/2/2/336/826107>)

And finally — something of a topical excursion, so less of a priority — a look at that most neuroscientifically shrewd of regulatory techniques: the nudge.

- Ryan Calo, *Code, Nudge, or Notice?* 99 *Iowa L. Rev.* 773 (2014) (available at <https://ilr.law.uiowa.edu/assets/Uploads/ILR-99-2-Caló.pdf>) (we will only get to this paper in-class if time permits; consider it a recommended reading)
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10. Behavioural Neurogenetics & Neuroprediction

January 16

The page count for these readings is high, so mind the underlined guidance and flex your skimming skills. First, two looks at predicting violent behaviour:

- Thomas **Nadelhoffer**, Stephanos Bibas, Scott Grafton, Kent A. Kiehl, Andrew Mansfield, Walter Sinnott-Armstrong, & Michael Gazzaniga, *Neuroprediction, Violence, and the Law: Setting the Stage*, 5 *Neuroethics* 67 (2012) (available at <https://static1.squarespace.com/static/5421d642e4b07faa7b196099/t/542dc2b7e4b0a98dd74f9b00/1412285111182/neuroprediction-violence-and-the-law.pdf>) (you may skim the first two sections dealing with risk assessment)
- Andrea L. **Glenn** & Adrian **Raine**, *Neurocriminology: Implications for the Punishment, Prediction, and Prevention of Criminal Behaviour*, 15 *Nature Reviews Neuroscience* 54 (2014) (available at https://repository.upenn.edu/cgi/viewcontent.cgi?article=1124&context=neuroethics_pubs) (the article is shorter than it looks, and you may skim from page 11 onward)

Next, a different type of legal problem posed by a different type of neuroprediction:

- Stephanie A. **Kostiuk**, *After GINA, NINA? Neuroscience-Based Discrimination in the Workplace*, 65 *Vanderbilt L. Rev.* 933 (2012) (available at https://www.vanderbiltlawreview.org/wp-content/uploads/sites/89/2012/04/Kostiuk_65_Vand_L_Rev_933.pdf) (you may skim or skip parts I and III)

Finally, connecting this session to the next:

- Colleen M. **Berryessa**, *Judges' Views on Evidence of Genetic Contributions to Mental Disorders in Court*, 27(4) *J. Forensic Psychiatry and Psychology* 586 (2016) (available at <http://pubmedcentralcanada.ca/pmcc/articles/PMC5006742/pdf/nihms779895.pdf>) (focus on the Findings and Discussion sections)
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11. Empirical Psychology of Juror & Judicial Decision-Making

January 17 • JSS ch. 16

Neuroethics is sometimes said to be “the ethics of neuroscience and the neuroscience of ethics” — and we adapt the latter here to look at the neuroscience (or at least the psychology) of law. First, a write-up of several electrifying studies:

- Matthew R. **Ginther**, Francis X. Shen, Richard J. Bonnie, Morris B. Hoffman, Owen D. Jones, René Marois, & Kenneth W. Simons, *The Language of Mens Rea*, 67 Vanderbilt L. Rev. 1327 (2014) (available at <https://www.vanderbiltlawreview.org/2014/10/the-language-of-mens-rea/>) (no need to delve into the various Appendices unless you are interested)

Next, the paper that launched an entire subfield of rather practically important philosophy and did so in about the length of a quick sneeze:

- Joshua **Knobe**, *Intentional Action and Side Effects in Ordinary Language*, 63 Analysis 190 (2003) (available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.320.1032&rep=rep1&type=pdf>)

And speaking of quick-sneeze-length papers, one study and one roundup looking at brain narratives and images in the courtroom:

- Lisa G. **Aspinwall**, Teneille R. Brown, & James Tabery, *The Double-Edged Sword: Does Biomechanism Increase or Decrease Judges’ Sentencing of Psychopaths?* 337 Science 846 (2012) (available at <http://www.marist.edu/professional-programs/center-for-lifetime-study/Genetics%20Resource%201g.pdf>)
 - Adina L. **Roskies**, Nicholas J. Schweitzer, & Michael J. Saks, *Neuroimages in Court: Less Biasing Than Feared*, 17 Trends in Cognitive Studies 99 (2013) (available at [http://www.cell.com/trends/cognitive-sciences/pdf/S1364-6613\(13\)00022-3.pdf](http://www.cell.com/trends/cognitive-sciences/pdf/S1364-6613(13)00022-3.pdf))
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12. Neuroenhancement: Policy, Law, & Ethics

January 18 • JSS ch. 19

This session will help move us from the empirical focus of previous days to the bigger-picture concerns in the final day of class. Start with this chapter from the bioethics commission under U.S. President Obama:

- **Presidential Commission** for the Study of Bioethical Issues, *Gray Matters: Topics at the Intersection of Neuroscience, Ethics, and Society* (Vol. 2) (2015) (available at https://bioethicsarchive.georgetown.edu/pcsbi/sites/default/files/GrayMatter_V2_508.pdf) (Ch. II only)

Not all neuroenhancement is pharmacological, as highlighted by this easy-to-read policy document from the U.K.:

- Hannah **Maslen**, Thomas Douglas, Roi Cohen Kadosh, Neil Levy, & Julian Savulescu, *Mind Machines: The Regulation of Cognitive Enhancement Devices*, Oxford Martin Policy Paper (2014) (available at https://www.oxfordmartin.ox.ac.uk/downloads/briefings/Mind_Machines.pdf)

Recalling the experimental methods from recent readings, have a look at this study:

- Nicholas S. **Fitz**, Roland Nadler, Praveena Manogaran, Eugene W.J. Chong, & Peter B. Reiner, *Public Attitudes Toward Cognitive Enhancement*, 7(2) *Neuroethics* 173 (2013) (available at <http://med-fom-neuroethics.sites.olt.ubc.ca/files/2013/05/Fitz-2013-Neuroethics.pdf>)

And last, fulfilling our promise to return to cognitive liberty while zooming out from policy to rights:

- Jan-Christoph **Bublitz**, *My Mind Is Mine!? Cognitive Liberty as a Legal Concept*, in *Cognitive Enhancement* (Hildt & Francke, eds., 2013) (available at <http://neuroethik.org/wp-content/uploads/2014/08/Bublitz-Draft-My-mind-is-mine-Cognitive-Liberty-as-a-Legal-Concept-2013.pdf>) (you may skim sections 1, 2, 6, and 7; you may prioritize the other two readings if time is short)
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13. Punishment Redux: the Clockwork Orange Problem

January 19

Recall our coverage of the Erickson paper on the “secret ambition” of neurolaw from near the beginning of the course as we work through the perspectives he criticized:

- Henry T. **Greely**, *Neuroscience and Criminal Justice: Not Responsibility but Treatment*, 56 Kansas L. Rev. 1103 (2008) (available at <https://pdfs.semanticscholar.org/3ce8/774eee6e47b8c9452cf20bc38d08b8020b24.pdf>) (you may skim sections II.B and II.C)
- Nicole A. **Vincent**, *Restoring Responsibility: Promoting Justice, Therapy, and Reform Through Direct Brain Interventions*, 8 Criminal Law & Philosophy 21 (2014) (available at <https://link.springer.com/content/pdf/10.1007%2Fs11572-012-9156-y.pdf>)

Coming full circle back to our first day of class, we shift from the perspectives of legal scholars to those of philosophers:

- Derk **Pereboom** & Gregg D. **Caruso**, *Hard-Incompatibilist Existentialism: Neuroscience, Punishment, and Meaning in Life*, in *Neuroexistentialism: Meaning, Morals, and Purpose in the Age of Neuroscience* (Caruso & Flanagan, eds., 2016) (available at https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2758312) (you may skim parts I and II; you may prioritize the other two readings if time is short)
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14. The Sci-Fi Horizon & the Future of Human Nature

January 22

Who are we, and what may we become — and how can law, rights, government, and morality get us there when neuroscience is busily upending our understanding? I intend for this bonus session to serve as an opportunity to look to farther shores.

Because January 22 falls on Exam Day for the term, this is not a formal class session but rather an informally convened discussion meant to conclude our time together. It will not be treated as a class session for the purposes of your attendance / participation credit. However, if you still need to submit a Discussion Commentary, you may do so for this day.

All of you will doubtless be down to the wire on your papers, but I hope you come all the same to enjoy the food for thought on this fourteenth of our thirteen meetings.

We will discuss a few pages from the introductory section of this book:

- Jürgen **Habermas**, *The Future of Human Nature* (2003) (available at https://monoskop.org/images/3/36/Habermas_J%C3%BCrgen_The_Future_of_Human_Nature_2003.pdf) (pp. 1-16; skip part II within that)

Entirely optionally, glance through either of these papers — the first short, the other lengthier:

- Roberto **Andorno**, *What Is the Role of 'Human Nature' and 'Human Dignity' in Our Biotechnological Age?* 3 Amsterdam Law Forum 52 (2011) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1763180)
- I. Glenn **Cohen**, *This Is Your Brain on Human Rights: Moral Enhancement and Human Rights*, 9(1) Law and Ethics of Human Rights 1 (2015) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2610655)