The Consciousness Revolutions[*]

Mondays 11:20am – 1:50pm

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Mariposa clavada que medita su vuelo
(A pinned butterfly contemplating its flight)

Oda a Salvador Dalí
— FEDERICO GARCÍA LORCA

Voluala barchin heman la lauoluola dramme pagloni.   [Utopian]
Libenter impartio mea, non grauatim accipio meliora.   [Latin]
Willingly I share what I have, not unwillingly I accept what is better.   [English]
— PETER GILES
(From his addendum to Thomas More's *Utopia*, 1516)

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[*]Version 2, January 13, 2022.

1   Motivation and overview

Consciousness is all that you have in this world. Indeed, in a sense it *is* the world: when you descend into dreamless sleep, you vanish, and so does the world. This seminar focuses on a selection of topics arising from contemporary consciousness research. It starts by pointing to the key characteristic of consciousness, without realizing which it cannot be understood: like everything else about the mind, it is fundamentally a kind of computation. Among many other matters, this explains: how it is that we share some aspects of consciousness with bacteria; how it can arise in artificial machines and not just living ones; how the empty cocoon of the self that it spins ends up pretending to be the butterfly; and how consciousness dooms this virtual butterfly to the splendor and the suffering of being awake and aware. Unlike most other treatments of consciousness, this one concludes with a discussion of some possible ways whereby the pinned butterfly can, with a little help from its friends, do something about its condition.

2   Notes for participants

This section contains essential information for participants: format description, inclusion statement,[1] ground rules for discussion, and credit requirements.

2.1   Format

Note: in distinction from the typical Topics seminar, in this one will the students will not have to present papers. Instead, at each weekly meeting the instructor will give an overview of the material and lead the discussion.

2.1.1   The prerequisites

At least one course in a social science (psychology, sociology, anthropology), or permission of instructor.

2.2   Diversity, inclusion, and ground rules for discussion

Unlike in a large-enrollment lecture-based course, in which some students may choose, and succeed, to remain virtually anonymous, in a small-class seminar setting you are expected to contribute to the discussion at every weekly meeting. Because *your* informed opinion on every aspect of the material is unique and valuable, I shall strive to facilitate the conversation so as to make all voices heard. In this, I'll be counting on your help, and on the help of your classmates.

Even matters of "consensus" are not always easy to talk about, as the rare dissenters who dare voice their opposition know full well; how then should we approach potentially controversial topics? With care and compassion, diligence, openness, and daring: care for our shared humanity; diligence with regard to the relevant knowledge and findings; openness to informed dissent; and daring to venture into uncharted territory, as befits good education.

If at any point during the semester (no matter whether in class or after hours) you feel that you need to talk about any of these things, please let me know immediately — doing so will be my top priority.

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[1]The remarks in section 2.2, which are specific to this course, are intended to supplement the official Cornell statement on diversity and inclusion, which covers dimensions such as gender, race, socio-economic background, etc., and which can be found here: `http://diversity.cornell.edu/`.

2.3 Credit and grading

There are three components to getting credit for this course:

1. Attend the lecture and contribute to the discussion during the **weekly meetings**.

2. **No later than 9am on the Monday** for which readings have been assigned, post on the Canvas discussion board **questions** on the material. Be prepared to raise these questions in class. At least 10 questions should have been submitted by the end of the semester.

3. One week after the last class, submit an **essay** (approximately 1000-1500 words) on a consciousness-related topic chosen in consultation with the instructor.

Final grade components (for reference only; no numerical assessment of anything will be made in this seminar):—

Weekly questions	40%
Participation in the discussions:	10%
Final essay:	50%

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3 Weekly topics and readings

- **(January 31)** PRELUDE. THE FIRST REVOLUTION.

  1. Edelman, S. (2008). *Computing the mind: how the mind really works*. Oxford University Press, New York, NY, ch. 9, *Being No One*.
  2. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 7, *Consciousness*.
  3. Edelman, S. (2023). *The Consciousness Revolutions*. Springer, Cham, Switzerland. Forthcoming, *Prelude* and ch. 1, *Selfless Consciousness*.

- **(February 7)** THE TOWER OF POWER.

  1. Edelman, S. (2023). *The Consciousness Revolutions*. Springer, Cham, Switzerland. Forthcoming, ch. 2, *Minimal Selves*.
  2. [OPTIONAL] Moyal, R., Fekete, T., and Edelman, S. (2020). Dynamical Emergence Theory (DET): a computational account of phenomenal consciousness. *Minds and Machines*, 30, 1–21.

- **(February 14)** THE BRAIN'S VR ENGINE: VISION.

  1. Marr, D. (1982). *Vision*. W. H. Freeman, San Francisco, CA, section 3.3.
  2. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 24, *Perception*.

- **(February 21)** THE BRAIN'S VR ENGINE: LOCATION.

    1. Edelman, S. (2008). *Computing the mind: how the mind really works*. Oxford University Press, New York, NY, ch. 6, *Memory*.
    2. Wu, C.-T., Haggerty, D., Kemere, C., and Ji, D. (2017). Hippocampal awake replay in fear memory retrieval. *Nature Neuroscience*, 20(4), 571–583.
    3. Bellmund, J. L. S., Gärdenfors, P., Moser, E. I., and Doeller, C. F. (2018). Navigating cognition: Spatial codes for human thinking. *Science*, 362, eaat6766.

- (February 28) [February break — no class]

- **(March 7)** THE BRAIN'S VR ENGINE: MEMORY AND TIME TRAVEL.

    1. Edelman, S. (2008). *Computing the mind: how the mind really works*. Oxford University Press, New York, NY, ch. 6, *Memory*.
    2. Gilbert, D. T. and Wilson, T. D. (2007). Prospection: experiencing the future. *Science*, 317, 1351–1354.
    3. Buckner, R. L. (2010). The role of the hippocampus in prediction and imagination. *Annual Review of Psychology*, 61, 27–48.
    4. Hoerl, C. and McCormack, T. (2016). Making decisions about the future: regret and the cognitive function of episodic memory. In K. Michaelian, S. B. Klein, and K. Szpunar, editors, *Seeing the future: theoretical perspectives on future-oriented mental time travel*, chapter 12, pages 241–266. Oxford University Press, Oxford.
    5. Christophel, T. B., Klink, P. C., Spitzer, B., Roelfsema, P. R., and Haynes, J.-D. (2017). The distributed nature of working memory. *Trends in Cognitive Sciences*, 21, 111–124.

- **(March 14)** THE BRAIN'S VR ENGINE: EMBODIMENT.

    1. Edelman, S. (2008). *Computing the mind: how the mind really works*. Oxford University Press, New York, NY, ch. 9, *Being No One*.
    2. Ehrsson, H. H. (2007). The experimental induction of out-of-body experiences. *Science*, 317, 1048.
    3. Blanke, O. (2012). Multisensory brain mechanisms of bodily self-consciousness. *Nature Reviews Neuroscience*, 13, 556–571.
    4. Guterstam, A., Larsson, D. E. O., Szczotka, J., and Ehrsson, H. H. (2020). Duplication of the bodily self: a perceptual illusion of dual full-body ownership and dual self-location. *Royal Society Open Science*, 7, 201911.

- **(March 21)** THE BRAIN'S VR ENGINE: SELF-MODEL.

    1. Metzinger, T. (2004). The subjectivity of subjective experience: A representationalist analysis of the first-person perspective. *Networks*, 3-4, 33–64.
    2. Edelman, S. (2023). *The Consciousness Revolutions*. Springer, Cham, Switzerland. Forthcoming, ch. 3, *Self-consciousness*.

3. [OPTIONAL] Hohwy, J. and Michael, J. (2017). Why should any body have a self? In F. De Vignemont and A. J. T. Alsmith, editors, *The Subject's Matter*, pages 363–391. The MIT Press, Cambridge, MA.

- **(March 28)** PAIN.

  1. Kolodny, O., Moyal, R., and Edelman, S. (2021). A possible evolutionary function of phenomenal conscious experience of pain. *Neuroscience of Consciousness*, 7(2), niab012.

- (April 4) [Spring break — no class]

- **(April 11)** SPECIES OF SUFFERING.

  1. Metzinger, T. (2017). Suffering, the cognitive scotoma. In K. Almqvist and A. Haag, editors, *The Return of Consciousness*, pages 237–262. Axel and Margaret Ax:son Johnson Foundation, Stockholm.
  2. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 32, *Suffering*.
  3. Agarwal, A. and Edelman, S. (2020). Functionally effective conscious AI without suffering. *Journal of Artificial Intelligence and Consciousness*, 7, 39–50.
  4. Edelman, S. (2022). On the ethics of constructing conscious AI. In A. Chella, editor, *Computational Approaches to Conscious AI*. World Scientific. To appear.
  5. Edelman, S. (2023). *The Consciousness Revolutions*. Springer, Cham, Switzerland. Forthcoming, *Interlude*.
  6. [OPTIONAL] Metzinger, T. (2021). Artificial suffering: An argument for a global moratorium on synthetic phenomenology. *Journal of Artificial Intelligence and Consciousness*, 8(1), 1–24.
  7. [OPTIONAL] Edelman, S. (2021). Conscious AI is artificial slavery. In K. Wendland, N. Lahn, and P. Vetter, editors, *Künstliche Intelligenz mit Bewusstsein (Artificial Intelligence with Consciousness)*. To appear.

- **(April 18)** FALSE CONSCIOUSNESS. ALIENATION.

  1. Seeman, M. (1959). On the meaning of alienation. *American Sociological Review*, 24(6), 783–791.
  2. Harvey, D. (2018). Universal alienation. *Journal for Cultural Research*, 22(2), 137–150.
  3. Sawyer, J. and Gampa, A. (2020). Work alienation and its gravediggers: Social class, class consciousness, and activism. *Journal of Social and Political Psychology*, 8(1), 198–219.
  4. Levy, R. (1991). Structure-blindness: a non-ideological component of false consciousness. *International Journal of Sociology and Social Policy*, 11(6/7/8), 61–74.
  5. Augoustinos, M. (1999). Ideology, false consciousness and psychology. *Theory & Psychology*, 9(3), 295–313.
  6. [OPTIONAL] Wilson, L. (2021). Why they know not what they do: a social constructionist approach to the explanatory problem of false consciousness. *Journal of Social Ontology*, 7(1), 45–72.

7. **[OPTIONAL]** Graeber, D. (2004). *Fragments of an Anarchist Anthropology*. Prickly Paradigm Press, Chicago, IL. Available online at `https://www.prickly-paradigm.com/titles/fragments-anarchist-anthropology.html`.

8. **[OPTIONAL]** Malherbe, N. (2021). A psychopolitical interpretation of dealienation: Marxism, psychoanalysis, and liberation psychology. *Psychoanalysis, Culture & Society*.

- **(April 25)** PERSONAL PALLIATIVES.

  1. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 29, *Religion*.

  2. Renna, M. E., Quintero, J. M., Soffer, A., Pino, M., Ader, L., Fresco, D. M., and Mennin, D. S. (2018). A pilot study of Emotion Regulation Therapy for generalized anxiety and depression: findings from a diverse sample of young adults. *Behavior Therapy*, 49, 403–418

  3. Pickering, J. (2019). 'i do not exist': Pathologies of self among Western Buddhists. *Journal of Religion and Health*, 58, 748–769

- **(May 2)** THE ROADS TO FREEDOM. THE LAST REVOLUTION.

  1. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 25, *Politics*; 26, *Power*.

  2. Chatterton, P. and Pusey, A. (2020). Beyond capitalist enclosure, commodification and alienation: Postcapitalist praxis as commons, social production and useful doing. *Progress in Human Geography*, 44(1), 27–48.

  3. Di Paolo, E. A. (2021). Enactive becoming. *Phenomenology and the Cognitive Sciences*, 20, 783–809.

  4. Suissa, J. (2001). Anarchism, utopias and philosophy of education. *Journal of Philosophy of Education*, 35(4), 627–646.

  5. **[OPTIONAL]** Le Guin, U. K. (1974). *The Dispossessed*. Harper & Row, New York, NY.

  6. **[OPTIONAL]** Killjoy, M. (2014). *A Country of Ghosts*. AK Press, Chico, CA.

  7. **[OPTIONAL]** Doctorow, C. (2017). *Walkaway*. Tor Books, New York, NY.

- **(May 9)** CLOSING GENERAL DISCUSSION.

  1. **[OPTIONAL]** Graeber, D. and Wengrow, D. (2021). *The Dawn of Everything: A New History of Humanity*. Macmillan, London, UK.

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Ehrsson, H. H. (2007). The experimental induction of out-of-body experiences. *Science*, 317, 1048.

Gilbert, D. T. and Wilson, T. D. (2007). Prospection: experiencing the future. *Science*, 317, 1351–1354.

Graeber, D. (2004). *Fragments of an Anarchist Anthropology*. Prickly Paradigm Press, Chicago, IL. Available online at https://www.prickly-paradigm.com/titles/fragments-anarchist-anthropology.html.

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Guterstam, A., Larsson, D. E. O., Szczotka, J., and Ehrsson, H. H. (2020). Duplication of the bodily self: a perceptual illusion of dual full-body ownership and dual self-location. *Royal Society Open Science*, 7, 201911.

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Kolodny, O., Moyal, R., and Edelman, S. (2021). A possible evolutionary function of phenomenal conscious experience of pain. *Neuroscience of Consciousness*, 7(2), niab012.

Le Guin, U. K. (1974). *The Dispossessed*. Harper & Row, New York, NY.

Levy, R. (1991). Structure-blindness: a non-ideological component of false consciousness. *International Journal of Sociology and Social Policy*, 11(6/7/8), 61–74.

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Moyal, R., Fekete, T., and Edelman, S. (2020). Dynamical Emergence Theory (DET): a computational account of phenomenal consciousness. *Minds and Machines*, 30, 1–21.

Pickering, J. (2019). 'i do not exist': Pathologies of self among Western Buddhists. *Journal of Religion and Health*, 58, 748–769.

Renna, M. E., Quintero, J. M., Soffer, A., Pino, M., Ader, L., Fresco, D. M., and Mennin, D. S. (2018). A pilot study of Emotion Regulation Therapy for generalized anxiety and depression: findings from a diverse sample of young adults. *Behavior Therapy*, 49, 403–418.

Sawyer, J. and Gampa, A. (2020). Work alienation and its gravediggers: Social class, class consciousness, and activism. *Journal of Social and Political Psychology*, 8(1), 198–219.

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