

Psych 4320

Spring 2024

## The Consciousness Revolutions\*

Mondays 11:15am – 1:45pm

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

*Oda a Salvador Dalí*  
— FEDERICO GARCÍA LORCA

*Soyez réalistes, demandez l'impossible*  
(Be realist, demand the impossible)

— a May '68 slogan

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\*Final version, January 16, 2024.

# 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 covers 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.

A new special focus this year is on **climate change** — an accelerating global catastrophe caused by human actions, which can only be mitigated by understanding, and intervening on, the many relevant aspects of human consciousness.<sup>1</sup> From week 4 onward, every set of readings will include one or more papers, marked by \*, tying consciousness to climate change.

## 2 Notes for participants

This section contains essential information for participants: format description, inclusion statement,<sup>2</sup> 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

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<sup>1</sup>To get involved in climate action at Cornell, visit <https://www.cornellonfire.org/>.

<sup>2</sup>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: <https://diversity.cornell.edu/>.

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.

## 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**. Missing class without a prior notification may affect your grade.
2. **No later than 9am on the Monday** for which readings have been assigned, post on the Canvas discussion board, under the relevant week's thread, **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:—

Attendance and participation:	20%
Weekly questions	40%
Final essay:	40%

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## 3 Weekly topics and readings

### • Week 1 (January 22) SELFLESS CONSCIOUSNESS.

1. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, *Prelude* and ch. 1, *Selfless Consciousness*.
- [OPTIONAL] Edelman, S. (2008). *Computing the mind: how the mind really works*. Oxford University Press, New York, NY, ch. 9, *Being No One*.
- [OPTIONAL] Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 7, *Consciousness*.

### • Week 2 (January 29) MINIMAL SELVES.

1. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, ch. 2, *Minimal Selves*.
- [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.

- **Week 3 (February 5)** 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*.

- **Week 4 (February 12)** THE BRAIN'S VR ENGINE: LOCATION.

1. Bellmund, J. L. S., Gärdenfors, P., Moser, E. I., and Doeller, C. F. (2018). Navigating cognition: Spatial codes for human thinking. *Science*, 362, eaat6766.
2. \* Larsen, S. C. and Johnson, J. T. (2016). The agency of place: toward a more-than-human geographical self. *GeoHumanities*, 2(1), 149–166.

- **Week 5 (February 19)** THE BRAIN'S VR ENGINE: MEMORY AND TIME TRAVEL.

1. Gilbert, D. T. and Wilson, T. D. (2007). Prospection: experiencing the future. *Science*, 317, 1351–1354.
2. 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.
3. \* Stanley, S. K. (2023). Anticipatory solastalgia in the Anthropocene: Climate change as a source of future-oriented distress about environmental change. *Journal of Environmental Psychology*, 91, 102134.

- (February 26) [February break — no class]

- **Week 6 (March 4)** THE BRAIN'S VR ENGINE: EMBODIMENT.

1. Ehrsson, H. H. (2007). The experimental induction of out-of-body experiences. *Science*, 317, 1048.
  2. 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.
  3. \* Eli, R. (2018). Intercorporeality: An invitation to being in the human-body-nature relationship. *Journal of Conscious Evolution*, 9(9), 1.
- [OPTIONAL] Blanke, O. (2012). Multisensory brain mechanisms of bodily self-consciousness. *Nature Reviews Neuroscience*, 13, 556–571.

- **Week 7 (March 11)** THE BRAIN'S VR ENGINE: SELF-MODEL.

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

3. \* Carvalho, A. and Ferreira, V. (2022). Climate crisis, neoliberal environmentalism and the self: the case of ‘inner transition’. *Social Movement Studies*.

– [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.

• **Week 8 (March 18) 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.
2. \* Sampson, R. N. (1991). The politics of the environment. *Journal of Soil and Water Conservation*, 46(6), 398–400.
3. \* Sheather, J. (2021). The conflicts that killed COP26. *BMJ*, 375, n2798.

• **Week 9 (March 25) LANGUAGE.**

1. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, ch. 4, *Speech and sign*.
2. \* Grolleau, G., Mzoughi, N., Peterson, D., and Tendero, M. (2022). Changing the world with words? Euphemisms in climate change issues. *Ecological Economics*, 193, 107307.
3. \* Kurz, T. and Prosser, A. M. B. (2021). Understanding the social dynamics of climate change through analyses of discourse. *Current Opinion in Psychology*, 42, 71–75. Part of a themed issue on Psychology of Climate Change (2021), edited by Mark A. Ferguson and Michael T. Schmitt.

• (April 1) [Spring break — no class]

• **Week 10 (April 8) SELF AND SOCIETY.**

1. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, ch. 5, *Self and society*.
  2. \* Skotnicki, T. and Nielsen, K. (2021). Toward a theory of alienation: futurelessness in financial capitalism. *Theory and Society*, 50, 837–865.
  3. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, *Interlude*.
- [OPTIONAL] Seeman, M. (1959). On the meaning of alienation. *American Sociological Review*, 24(6), 783–791.

• **Week 11 (April 15) SPECIES OF SUFFERING.**

1. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 32, *Suffering*.
2. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, ch. 6, *Self-care*.

3. \* Ferrarello, S. (2023). Solastalgia: climatic anxiety — an emotional geography to find our way out. *The Journal of Medicine and Philosophy*, 48, 151–160. A Forum for Bioethics and Philosophy of Medicine.
- [OPTIONAL] 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.
- [OPTIONAL] Edelman, S. (2023b). On the ethics of constructing conscious AI. In A. Chella, editor, *Computational Approaches to Conscious Artificial Intelligence*, chapter 10. World Scientific.
- \* [OPTIONAL] Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., and van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. *Lancet Planet Health*, 5, e863–e873.

● **Week 12 (April 22) PERSONAL PALLIATIVES.**

1. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, ch. 6, *Self-care*.
2. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 29, *Religion*.
3. \* Jenkins, W., Berry, E., and Kreider, L. B. (2018). Religion and climate change. *Annual Review of Environment and Resources*, 43, 85–108.
4. \* Schwartz, S. E. O., Benoit, L., Clayton, S., Parnes, M. F., Swenson, L., and Lowe, S. R. (2023). Climate change anxiety and mental health: Environmental activism as buffer. *Current Psychology*, 42, 16708–16721.
- [OPTIONAL] 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.

● **Week 13 (April 29) A WORLD TO WIN.**

1. Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, ch. 7, *A World to Win*.
2. Edelman, S. (2020). *Life, Death, and Other Inconvenient Truths*. MIT Press, Cambridge, MA, ch. 25, *Politics*; 26, *Power*.
3. \* Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, *Epilogue*.
- [OPTIONAL] 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.

• **Week 14 (May 6) CLOSING REMARKS AND GENERAL DISCUSSION.**

1. [OPTIONAL] Doctorow, C. (2017). *Walkaway*. Tor Books, New York, NY.
2. [OPTIONAL] Doctorow, C. (2023). *The Lost Cause*. Tor Books, New York, NY.
3. [OPTIONAL] Wall Kimmerer, R. (2013). *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. Milkweed Editions, Minneapolis, MN.

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- 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.
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