

Psych 4320 / Cogst 4310 & 6311

Spring 2025

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

*Graduate course number pending final approval. Syllabus draft version 0, January 6, 2025.

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.

Starting in S2024, there is a new special focus 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.¹ 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,² 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

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

²The 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.
 - *Undergraduate students*: 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.
 - *Graduate students*: Post on the Canvas discussion board, under the relevant week's thread, a brief (~ 250 – 350 words) **synthesis** of all the assigned readings for that week.

The questions / synthesis must be posted on Canvas **no later than 9am on the Monday** for which readings have been assigned.

3.
 - *Undergraduate students*: One week after the last class, submit an **essay** (~ 1000 words) on a consciousness-related topic chosen in consultation with the instructor.
 - *Graduate students*: One week after the last class, submit an **essay** (~ 2000 words) that discusses and synthesizes two or more of the weekly topics, chosen in consultation with the instructor.

Final grade components:—

Attendance and participation: 20%

Weekly posts 40%

Final essay: 40%

3 Weekly topics and readings

• Week 1 (January 27) 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 (February 3) 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 10) 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 17) [February break — no class]
- **Week 4 (February 24) 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 (March 3) THE BRAIN’S VR ENGINE: MEMORY AND TIME TRAVEL.**
 1. Gilbert, D. T. and Wilson, T. D. (2007). Propection: 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.
- **Week 6 (March 10) 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. * Potts, M., Le Hunte, B., and Ross, K. (2024). On learning interbeing. *Journal of Transformative Education*, 22(1), 42–63.
- [OPTIONAL] Blanke, O. (2012). Multisensory brain mechanisms of bodily self-consciousness. *Nature Reviews Neuroscience*, 13, 556–571.

• **Week 7 (March 17) 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 24) 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.

• (March 31) [Spring break — no class]

• **Week 9 (April 7) 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.
- [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>.

• **Week 10 (April 14) 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. Kolodny, O., Moyal, R., and Edelman, S. (2021). A possible evolutionary function of phenomenal conscious experience of pain. *Neuroscience of Consciousness*, 7(2), niab012.
 4. * 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.

• **Week 11 (April 21) 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] Comas-Díaz, L. (2020). Liberation psychotherapy. In L. Comas-Díaz and E. Torres Rivera, editors, *Liberation Psychology: Theory, Method, Practice, and Social Justice*, chapter 9, pages 169–186. American Psychological Association. Available online at <http://www.jstor.org/stable/j.ctv1chs1sn>.

• **Week 12 (May 28) 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; ch. 26, Power.
- [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 13 (May 5) CLOSING REMARKS AND GENERAL DISCUSSION.**

1. * Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland, *Epilogue*.
2. [OPTIONAL] Le Guin, U. K. (1974). *The Dispossessed*. Harper & Row, New York, NY.
3. [OPTIONAL] Killjoy, M. (2014). *A Country of Ghosts*. AK Press, Chico, CA.
4. [OPTIONAL] Doctorow, C. (2017). *Walkaway*. Tor Books, New York, NY.
5. [OPTIONAL] Doctorow, C. (2023). *The Lost Cause*. Tor Books, New York, NY.
6. [OPTIONAL] Kimmerer, R. W. (2013). *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. Milkweed Editions, Minneapolis, MN.

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References

- Bellmund, J. L. S., Gärdenfors, P., Moser, E. I., and Doeller, C. F. (2018). Navigating cognition: Spatial codes for human thinking. *Science*, 362, eaat6766.
- Blanke, O. (2012). Multisensory brain mechanisms of bodily self-consciousness. *Nature Reviews Neuroscience*, 13, 556–571.
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- Doctorow, C. (2017). *Walkaway*. Tor Books, New York, NY.
- Doctorow, C. (2023). *The Lost Cause*. Tor Books, New York, NY.
- Edelman, S. (2008). *Computing the mind: how the mind really works*. Oxford University Press, New York, NY.
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- Edelman, S. (2023a). *The Consciousness Revolutions: From Amoeba Awareness to Human Emancipation*. Springer, Cham, Switzerland.
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- Ehrsson, H. H. (2007). The experimental induction of out-of-body experiences. *Science*, 317, 1048.

- 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.
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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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- Kimmerer, R. W. (2013). *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. Milkweed Editions, Minneapolis, MN.
- Kolodny, O., Moyal, R., and Edelman, S. (2021). A possible evolutionary function of phenomenal conscious experience of pain. *Neuroscience of Consciousness*, 7(2), niab012.
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- Marr, D. (1982). *Vision*. W. H. Freeman, San Francisco, CA.
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- Metzinger, T. (2017). Suffering, the cognitive scotoma. In K. Almquist and A. Haag, editors, *The Return of Consciousness*, pages 237–262. Axel and Margaret Ax:son Johnson Foundation, Stockholm.

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- Potts, M., Le Hunte, B., and Ross, K. (2024). On learning interbeing. *Journal of Transformative Education*, 22(1), 42–63.
- 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.
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