



HPSC0023

Evolution in Science and Culture

Syllabus

v1

Session	2023-24
Information	profjoecain.net/0023
Reading List	profjoecain.net/0023read
Moodle site	profjoecain.net/0023moodle
Timetable	profjoecain.net/0023time

Description

Evolution is an idea at the heart of modern society. Everything evolves. This module explores the history of evolution as an idea in science and culture, covering topics from the eighteenth century to the present. Yes, it's about science: Darwin, Darwinism, and evolutionary studies are key. But there is so much more. We explore episodes as diverse as (a) dinosaurs and the origin of life, (b) social Darwinism and corporate capitalism, (c) eugenics, empire, and militarism, (d) the clash in religion between fundamentalism and modernity, and (e) changing views of what it means to be human. We also explore the idea of hero worship and commemoration: for example, why is Darwin buried in Westminster Abbey? In this module, we keep anchored on the life and work of Charles Darwin, but this anchorage provides opportunities to explore far and wide in the history of science and culture.

Key Information

Assessment	100%	essay (3,000 words)
Required texts	profjoecain.net/0023read	

Module Tutor

Module tutor	Professor Joe Cain
Contact	J.Cain@ucl.ac.uk t: 020 7679 3041
Web	www.ucl.ac.uk/sts/cain
Office location	22 Gordon Square, room 4.3
Office hours:	Mondays 11:00-12:30 in-person drop-in sessions Tuesday and Thursday afternoons online; book: < profjoecain.net/meet >

Aims and Objectives

Aims

As an advanced module, HPSC0023 pursues several kinds of goals. To develop knowledge of content in the history and context of evolutionary studies, this module surveys major themes, actors, and conceptual shifts – in short, what are the big ideas associated with evolution and Darwinism? It seeks to integrate broad historical themes and contexts into this survey.

Primary sources are the foundation of required readings for this module so students may develop skills working with original source materials: their reading, weighting, and critical assessment. To further develop skills in textual analysis and critical assessment, attention will be paid to close reading of secondary materials from different types of sources. This module also asks basic questions about historiography.

The teaching method for this module during contact hours will be lectures and in-class discussions. A schedule of independent reading and research also is set. Module assessment is integrated into this programme.

Objectives

By the end of this module students should be able to:

- demonstrate content knowledge for the module's domain as well as historiographical insight into relevant scholarly literature
- demonstrate the ability to knowledgeably interpret both primary and secondary sources
- demonstrate skill in historical reasoning and comparative analysis
- approach new material in this module's domain from a historical perspective and with a critical historian's eye
- demonstrate an appreciation for principles of historical contingency, myth making, and icon construction as it might be applied to other characters in other settings

Module Plan

Student responsibilities in this module will centre on four components: in-person sessions, flipped sessions, an independent research project, and independent reading and study.

In-person sessions

We meet in person for two hours per week. Sessions are organised around particular themes, and they will survey key content and historiography relevant to the chosen themes.

Preparatory tasks are set for each session via Moodle. Students are encouraged to come to each session having skimmed and reflected on readings set for that day. Close reading of texts will be more productive following the sessions. Additional readings and Web sites are suggested for further investigation of module topics.

Sessions typically have handouts associated with in-class work. These will be posted on Moodle prior to the session. A limited number of paper copies will be available in the room.

Flipped sessions

The 1x2hr block system can be exhausting. I find it impossible to cover content over that period of time in a way that makes for quality learning: students find it hard to keep focus; I find it hard to keep focus, too. As a solution, I “flip” some of my material by giving pre-recorded materials that can be studied asynchronously. This allows me to open up time in our face-to-face sessions for discussion and analysis. It allows students to manage their own learning in ways that suit whatever timetable they choose.

Research project

Students are expected to undertake independent research and writing on a topic within a range of assigned options. Work will be organized into stages, with formative feedback provided to students who submit materials according to prescribed timelines.

Considerable guidance will be available for the research and writing elements of the project. Students also was strongly encouraged to discuss their ideas with peers and to use other support services in the university, such as the Academic Communication Centre.

Independent reading and study

Student frequently ignore the programme’s expectation of independent learning associated with every module. This is a substantial part of our expectation for your knowledge building and skills development. Lecture time is not the only learning time you have in the university as part of your tuition.

For this module, a superabundance of literature exists, and there is seemingly no end of topics that can be pursued through independent study. This includes making use of London’s extensive cultural assets, such as museums and professional societies. To this, add a considerable range of online resources, from scholarly projects to streamed media to podcasts to library recourses.

It’s a mistake to think your tutors only want to engage with you during class sessions. Let me strongly encourage you to make use of drop-in times and on-line availability to talk about your independent learning and skill development. Let me also strongly encourage you to self-organise reading and discussion groups associated with your studies. You learn more when you learn together.

Schedule

Week	Date	Topic	Essential Readings	Recommended Readings
0	Before	Darwin in Person	Darwin (1859: 1-6) Huxley (1882)	
1	06/10	Celebrity	Browne (2005)	Moore (1982)
	Flip	Origin of Species	Darwin (1859: 60-130)	Ruse (1975)
2	13/10	Deep Time	NHM (Marine Reptiles Gallery) Desmond (1979)	Michel and Witton (2022)
	Flip	Comparative Anatomy	Rehbock (1990)	Stott (2012)
3	20/10	Mind	Ellegard ([1958] 1990: 293-331)	Hamlin (2021) Dawson (2007)
	Flip	Body	Huxley (1864)	
	20/10	Project proposal due	upload before 12:00	Formative assessment
4	27/10	Progress	Desmond and Moore (2009: 172-198) Stenhouse (2022)	Haller (1971: 203-210) Brantlinger (2003)
	Flip	Chance	Gould (1989: 23-52)	Jablonski (1986)
5	03/11	Female	Cooke (2022: 182-214 and ix-xxi) and YouTube	Milam (2010: 135-168) Mitman (1990)
	Flip	Rational	Dawkins (1976: 88-108)	
	10/11	Reading Week	No lectures this week	
6	17/11	Competition	Carnegie (1889ba, 1889ab) Bannister(1979: 3-13)	Moore (1985) Gay (1998)
	Flip	Cooperation	Kropotkin (2020: vii-xix) Todes (1987)	Nicolosi (2020)
7	24/11	White	Bonnet (2008) Searle (1976)	Bratcher Goodwin (2022) Oluniyi (2023)
	Flip	Show	Rydell (1993: 39-71) Qureshi (2011: 1-12, 101-125)	Rothfels (2002)
	24/11	Status report due	upload before 12:00	Formative assessment
8	01/12	Future	Galton ([1869 and 1892] 1978: 336-362) Pearson (1909)	Elshakry (2013)
	Flip	Pure	Proctor (1988: 177-222) Anderson (2012)	Farber (2011)
9	08/12	God	Bryan (1925: 170-182) Cain (2001)	Cain (2009) Numbers (1992)
	Flip	Extinction	Melville (1854) Darwin (1839: 453-478)	Barrow (2009) Nichols (2015)
10	15/12	Modernisation	Jiang (2021) Zhu (2020)	Schmalzer (2008)
	Flip	Cold War North	Lysenko (1949) AtomicScientists (1949)	Hudson (1946) Agar (2013: 186-210)
	19/12	Final paper due	upload before 17:00	Summative assessment

Assessment: Research Project

Essential information

Your assignment is to produce a research paper of approximately 3,000 words. Base your essay on one of the titles below. Choose **one title** in **one** of the options.

The final project is due **Tuesday 19 December 2023**, 17:00 London time. Upload this through Moodle.

Three stages

Your work will move through several stages:

Stage 1: Project proposal (before 20 October 2023, 12:00 noon via Moodle)

Submit a one-page proposal of your project. This is formative assessment. The feedback will be used to guide your research. Instructions will be provided.

Stage 2: Status report (before 24 November 2023, 12:00 noon via Moodle)

Submit a 5-minute recorded progress report in which you describe your progress to date and highlight any problems or questions you're encountering. This is formative assessment, provided to give you feedback for improving the final paper. Instructions will be provided.

Stage 3: Final paper (before 19 December 2023, 17:00 via Moodle)

Submit your final paper through Moodle. This is summative assessment contributing 100% to the final mark for the module. Your final paper will be structured as follows:

1. **Introduction:** Identify your research question. State your thesis. Be clear about what you see as your contribution to the subject. (estimated length: ~250 words)
2. **Literature review:** Provide a short literature review that identifies standard or major narratives already existing in the subject: what does the existing literature tell us? This draws only on secondary sources and should show your analytical skills. It should not be a detail description of what these works tell us. (~750 words)
3. **Original research:** Undertake research using primary sources related to your topic. This should be the bulk of your essay. (~1750 words)
4. **Conclusions.** Summarise your results in a paragraph designed to tell me what is new and important in your work. This should emphasise the research you undertook with the primary sources. (~250 words)

Follow my style guide <profjoecain.net/style-guide>. I prefer a citation style such as Harvard. Your paper's word count includes footnotes or endnotes; it excludes bibliography and ancillary materials such as figure legends.

Choice of titles for research paper

Option 1: I want to know more about Darwin

Biography is an essential part of historical research. In this option, you will investigate one element of Darwin's life and work.

- Darwin and his family
- Darwin's assistants
- Darwin's interactions with amateur networks, such as pigeon fanciers
- Darwin's time spent on *HMS Beagle*
- Darwin and his publisher
- Darwin and reviewers of his work
- Darwin's views on [something]

Option 2: I want to know more about Darwin's ideas

Darwin wrote on many topics, and he wrote many books and papers. You could investigate Darwin's thinking on one specific subject by collecting work into a coherent research programme or set of experiences. Or, you can investigate one element of his life, as noted above.

All of Darwin's works are available online

- darwin-online.org.uk

All known Darwin correspondence is available online, too:

- darwinproject.ac.uk

Several sources bring together important reviews of Darwin's publications.

Option 2: I want to know more about Darwinism

Many people claim to be a true Darwinian. Investigate one person or one linked group of people who fall into this category. Investigate their claim to being Darwinian. Choices are:

1. Cooke, Lucy
2. Huxley, Julian
3. Gould, Stephen Jay
4. Jones, Steve
5. Lane, Nike
6. Leakey, Mary
7. Margulis, Lynn
8. Wilson, E.O.

I'm willing to consider another "Darwinian" working after 1980. Discuss this with me if you have a particular suggestion.

Option 4: I want to investigate something else

Select one of the following titles to investigate.

1. *Vestiges of the Natural History of Creation* (1844) promoted evolution long before Darwin's *Origin of Species*.
2. Humans were put on display widely in the 19th and early 20th century. Investigate how this relates to Darwinism.
3. Darwin's encountered people of many cultures in South America. How did they impact his thinking?
4. Investigate Peter Bowler's claim for an "eclipse of Darwinism".
5. Crystal Palace Dinosaurs tell us about the history of British evolutionism
6. Evolutionism as a key theme in the work of H.G. Wells.
7. Examine Brian Donovan's argument that teaching simple Mendelism in biology courses supports white supremacy.
8. Investigate UNESCO's engagement with "The Race Question" (UNESCO, 1950b, UNESCO, 1950a).
9. Eugenics in California was especially passionate about their cause. Investigate their motives and claims.
10. Investigate one line of research into evolution on the Galapagos during the 20thC.
11. Investigate the relationship between Lysenko and Darwinism.
12. Compare T.H. Huxley's (1893) *Evolution and Ethics* with Yán Fù's (严复) translation as Tianyan lun 天演論 (1896-1898).

Additional information

I encourage you to discuss your essay with me well in advance of the due date.

I provide a style guide <profjoecain.net/style-guide>, and I prefer the Harvard system for citations. (Details: <library-guides.ucl.ac.uk/Harvard>.)

Criteria for assessment are discussed on the 0023 Moodle page. Basically, essays will be assessed on the following terms:

- the depth of scholarship and use of resources beyond those in lecture and required reading
- the ability to identify both major and subtle points of the subject
- the extent of your critical assessment
- the evidence you provide for having reflected on and extended module content and themes
- the general scholarly presentation of the work performed

My most common criticisms on student essays relate to:

- too much description/summary of readings and not enough analysis
- not developing your own argument
- no evidence of independent research
- poor organisation and poor referencing techniques
- use of only one source or poor choice of sources (such as *Encyclopaedia Britannica* or *Wikipedia*)

Important Policy Information

Refer to the [STS Student Handbook](#). We follow the rules of that handbook.

Engaging with AI

UCL provides guidance for "[Engaging with AI in Your Education and Assessment](#)".

AI classification

This module has a **Category 2** rating regarding use of AI tools.

Category 2: AI tools can be used in an assistive role*

Students are permitted to use AI tools for specific defined processes within the assessment.

AI tools can be utilised to support the development of specific skills as required by the assessment. Students can leverage AI for tasks such as data analysis, pattern recognition, or generating insights. There will be some aspects of the assessment where the use of AI is inappropriate.

Examples of where AI might be used in an assistive category include:

- drafting and structure content
- supporting the writing process in a limited manner
- as a support tutor
- supporting a particular process such as testing code or translating content
- giving feedback on content, or proofreading content.

Extensions and Mitigations

This is a long-term project, and time management is a learning objective. Information about extensions and mitigations is provided in the [STS Student Handbook](#). Individual tutors cannot grant extensions on their own initiative, so please do not ask. STS respects all SORAs and ECs approved elsewhere in the university; normally, these are communicated to STS automatically.

Project Feedback

Your feedback and first marks on coursework will be accessible via Moodle, normally four weeks (20 working days) after the submission date. We aim to give formative feedback sooner, normally two weeks. Please note that first marks are provisional and might change after second marking and

moderation by external examiners. Marks are confirmed and fixed in summer at the STS Board of Examiners.

Please focus on the feedback provided by the first marker. This is provided to help you improve in future work. You should discuss all your feedback with your personal tutor with the aim of identifying weaknesses and possible routes for improvement.

Course Communications

Communications from the module tutor will use several paths:

- Moodle Announcements: the principal means for communications in this module.
- Hint: You can set Moodle to “digest” communications (collecting all notices sent in one day into a single email sent once per day). I find “digest” helps keep me organize and avoids disruption hour-to-hour in my day.
- If I have a matter for you specifically, I will communicate via your UCL email address. I don't use other email address. I'll put “0023” in the subject line to help you filter.
- Hint: If you want help managing email using filters, see UCL IS's “how-to” guides: <https://www.ucl.ac.uk/isd/how-to-guides>

If you need to communicate with the module tutor, use email in the first instance. See contact details at the front of the syllabus.

Reading List

This is a complete list of essential readings. All these readings and module lectures are fair game for examination. Substitutions may be made during term. All readings are linked on Moodle. Some volumes also are available in the DMS Watson Library.

AGAR, J. 2013. *Science in the Twentieth Century and Beyond*, London, Polity Press.

ANDERSON, W. 2012. Hybridity, Race, and Science: The Voyage of the Zaca, 1934–1935. *Isis*, 103, 229-253.

ATOMICSCIENTISTS 1949. Scientific Truth and Freedom in Our Time: The Russian Purge of Genetics [articles by Sewall Wright, L.C. Dunn, Karl Sax, Theodosius Dobzhansky, M.B. Crane, and Richard Goldschmidt]. *Bulletin of the Atomic Scientists*, 5, 130-156.

BANNISTER, R. C. 1979. *Social Darwinism: Science and Myth in Anglo-American Social Thought*, Philadelphia, PA, Temple University Press.

BARROW, M. V., JR. 2009. *Nature's Ghosts: Confronting Extinction from the Age of Jefferson to the Age of Ecology*, Chicago, University of Chicago Press.

BONNET, A. 2008. Whiteness and the West. In: DWYER, C. & BRESSEY, C. (eds.) *New Geographies of Race and Racism*. Aldershot: Ashgate.

BRANTLINGER, P. 2003. *Dark Vanishings: Discourse on the Extinction of Primitive Races, 1800-1930*, Cornell, NY, Cornell University Press.

A Eugenics Philosophy That's Hard to Die, 2022. Directed by BRATCHER GOODWIN, M. UK: Adelphi Genetics Forum.

BROWNE, J. 2005. Presidential Address: Commemorating Darwin. *British Journal for the History of Science*, 38, 251-274.

BRYAN, W. J. 1925. [Speech Delivered at Scopes Trial]. In: SCOPESTRAL (ed.) *The World's Most Famous Court Trial: Tennessee Evolution Case*. Dayton, TN: Rhea County Historical Society.

CAIN, J. 2001. *Scopes Trial and Fundamentalism in the United States* [Online]. London: Macmillan Publishers Ltd, Nature Publishing Group. Available: <https://doi.org/10.1038/npg.els.0003358> [Accessed].

CAIN, J. (ed.) 2009. *William Jennings Bryan's Last Message: a reprint of his famous closing arguments for the 1925 Scopes Monkey Trial, undelivered and posthumously published*, London: Euston Grove Press.

- CARNEGIE, A. 1889a. The Best Fields for Philanthropy. *North American Review and Miscellaneous Journal*, 149, 682-698.
- CARNEGIE, A. 1889b. Wealth. *North American Review and Miscellaneous Journal*, 148, 653-664.
- COOKE, L. 2022. *Bitch: A Revolutionary Guide to Sex, Evolution and the Female Animal*, London, Doubleday.
- DARWIN, C. 1839. *Narrative of the Surveying Voyages of His Majesty's Ships Adventure and Beagle, Between the Years 1826 and 1836, Describing Their Examination of the Southern Shores of South America, and the Beagle's Circumnavigation of the Globe. In Three Volumes. Volume III.*, London, Henry Colburn.
- DARWIN, C. 1859. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*, London, John Murray.
- DAWKINS, R. 1976. *The Selfish Gene*, Oxford, Oxford University Press.
- DAWSON, G. 2007. *Darwin, Literature, and Victorian Respectability*, Cambridge, Cambridge University Press.
- DESMOND, A. 1979. Designing the Dinosaur: Richard Owen's Response to Robert Edmond Grant. *Isis*, 70, 224-234.
- DESMOND, A. & MOORE, J. 2009. *Darwin's Sacred Cause: Race, Slavery and the Quest for Human Origins*, London, Allen Lane.
- ELLEGARD, A. [1958] 1990. *Darwin and the General Reader: The Reception of Darwin's Theory of Evolution in the British Periodical Press, 1859-1872*, Chicago, University of Chicago Press.
- ELSHAKRY, M. 2013. *Reading Darwin in Arabic, 1860-1950*, Chicago, University of Chicago Press.
- FARBER, P. 2011. *Mixing Races: From Scientific Racism to Modern Evolutionary Ideas*, Baltimore, MD, Johns Hopkins University Press.
- GALTON, F. [1869 and 1892] 1978. *Hereditary Genius: An Inquiry into Its Laws and Consequences*, London, Friedmann.
- GAY, H. 1998. No 'Heathen's Corner' Here: The Failed Campaign to Memorialize Herbert Spencer in Westminster Abbey. *British Journal for the History of Science*, 31, 41-54.
- GOULD, S. J. 1989. *Wonderful Life: The Burgess Shale and the Nature of History*, New York, W. W. Norton.
- HALLER, J. 1971. *Outcasts from Evolution: Scientific Attitudes of Racial Inferiority, 1859-1900*, Carbondale, IL, Southern Illinois University Press.
- HAMLIN, K. A. 2021. Darwin's bawdy: The popular, gendered and radical reception of the Descent of Man in the US, 1871–1910. *BJHS Themes*, 6, 115-131.
- HUDSON, P. S. & RICHENS, R. H. 1946. *The New Genetics in the Soviet Union*, Cambridge, College of Agriculture, Cambridge, imprinted as Imperial Bureau of Plant Breeding and Genetics.
- HUXLEY, T. H. (ed.) 1864. *Evidence as to Man's Place in Nature*, London: Williams and Norgate.
- HUXLEY, T. H. 1882. Charles Darwin [notice of death]. *Nature*, 25, 597.
- JABLONSKI, D. 1986. Background and mass extinctions: the alternation of macroevolutionary regimes. *Science*, 231, 129-133.
- JIANG, L. 2021. The late ascent of Darwin's Descent: exploring human evolution and women's role for a new China, 1927–1965. *BJHS Themes*, 6, 201-220.
- LYSENKO, T. D. 1949. On the Situation in Biological Science. In: LENINACADEMYOFAGRICULTURALSCIENCE (ed.) *The Situation in Biological Science: Proceedings of the Lenin Academy of Agricultural Sciences of the U.S.S.R., Session July 31 - August 7, 1948 Verbatim Report*. Moscow: Foreign Languages Publishing House.
- MELVILLE, H. 1854. The Encantadas. In: WEAVER, R. (ed.) *The Shorter Novels of Herman Melville*. New York: Fawcett Premier.
- MICHEL, E. & WITTON, M. 2022. *Art and science of the Crystal Palace dinosaurs*, Ramsbury, UK, Crowood Press.
- MILAM, E. 2010. *Looking for a Few Good Males: Female Choice in Evolutionary Biology*, Baltimore, MD, Johns Hopkins University Press.

- MITMAN, G. 1990. Dominance, Leadership, and Aggression: Animal Behavior Studies During the Second World War. *J Hist Beh Sci*, 26, 3-16.
- MOORE, J. 1982. Charles Darwin Lies in Westminster Abbey. *Biological Journal of the Linnean Society*, 17, 97-113.
- MOORE, J. 1985. Herbert Spencer's Henchmen: The Evolution of Protestant Liberals in Late Nineteenth-Century America. In: DURANT, J. (ed.) *Darwinism and Divinity: Essays on Evolution and Religious Belief*. Oxford: Basil Blackwell.
- NICHOLS, H. 2015. *Galapagos: A Natural History*, ??, ??
- NICOLOSI, R. 2020. The Darwinian Rhetoric of Science in Petr Kropotkin's *Mutual Aid: A Factor of Evolution* (1902). *Berichte zur Wissenschaftsgeschichte [History of Sciences and Humanities]*, 43, 141-159.
- NUMBERS, R. 1992. *The Creationists: The Evolution of Scientific Creationism*, New York, Knopf.
- OLUNIYI, O. 2023. *Darwin Comes to Africa : Social Darwinism and British Imperialism in Northern Nigeria*, Seattle, WA, Discovery Institute.
- PEARSON, K. 1909. *The scope and importance to the state of the science of national eugenics*, London, Dulau and Co. for Francis Galton Laboratory for National Eugenics, University of London.
- PROCTOR, R. 1988. *Racial Hygiene: Medicine Under the Nazis*, Cambridge, MA, Harvard University Press.
- QURESHI, S. 2011. *Peoples on Parade: Exhibitions, Empire, and Anthropology in Nineteenth-Century Britain*, Chicago, University of Chicago Press.
- REHBOCK, P. F. 1990. Transcendental Anatomy. In: CUNNINGHAM, A. & JARDINE, N. (eds.) *Romanticism and the Sciences*. Cambridge: Cambridge University Press.
- ROTHFELS, N. 2002. *Savages and Beasts: The Birth of the Modern Zoo*, Baltimore, MD, Johns Hopkins University Press.
- RUSE, M. 1975. Darwin's Debt to Philosophy. *Stud Hist Phil Sci*, 6, 159-181.
- RYDELL, R. 1993. *World of Fairs: The Century-of-Progress Expositions*, Chicago, University of Chicago Press.
- SEARLE, G. R. 1976. *Eugenics and Politics in Britain, 1900-1914*, Leyden, Noordhoff International Publishing.
- STENHOUSE, J. 2022. Reading Darwin during the New Zealand wars: Science, religion, politics and race, 1835–1900. *Studies in History and Philosophy of Science*, 96, 87-99.
- STOTT, R. 2012. *Darwin's Ghosts: In Search of the First Evolutionists*, London, Bloomsbury.
- TODES, D. 1987. Darwin's Malthusian Metaphor and Russian Evolutionary Thought, 1859-1917. *Isis*, 78, 537-551.
- UNESCO 1950a. The Race Question. In: UNESCO (ed.) *UNESCO and its Programmes, volume 3*. Paris: UNESCO.
- UNESCO 1950b. Statement by Experts on Race Problems. unpublished document dated 20 July 1950, UNESCO/SS/1 Paris.
- ZHU, J., ZHANG, M. & WEISBERG, M. 2020. Why does the Chinese public accept evolution? *Studies in History and Philosophy of Science Part A*, 81, 116.124.