



# ***Philosophy of Time Travel (PHIL10125) Course Guide 2020/21***

## **Course Organiser:**

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I hope to be offering **office hours** as well but they will obviously be contingent on how the re-opening of University proceeds in the wake of Covid-19. So look out for further announcements but chats via (e.g.) Skye or Teams will be possible regardless.

## **Course Secretary:**

Ms. Ann Marie Cowe, [philinfo@ed.ac.uk](mailto:philinfo@ed.ac.uk)  
Undergraduate Teaching Office,  
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## Course Aims and Objectives

This course will offer detailed seminars on key philosophical issues in the philosophy of time travel, largely with an analytical slant. Students should end this course conversant with a range of significant metaphysical (and other) issues surrounding time travel. No detailed logical, scientific or metaphysical expertise will be assumed, and the course is intended to be accessible to students with a wide range of philosophical interests and aptitudes.

## Intended Learning Outcomes

To develop further the philosophical skills, and to extend and deepen the philosophical knowledge, acquired in previous philosophy courses. Transferable skills that students will acquire or hone in taking this course should include the following:

- written skills (through summative essays)
- oral communication skills (through lecturer-led and/or student-led seminar discussions)
- presentation skills (through giving and criticising student presentations)
- analytical skills (through exploring a carefully-chosen series of philosophical texts)
- ability to recognise and critically assess an argument.

## Lecture Times and Locations

### Second semester

**Day/ Time: Again, this is all rather contingent on how re-opening proceeds. However please note that: i) all lecture content is already available in pre-recorded form on the LEARN page for this course, and ii) we have resources to allow this course to proceed fully online if required. I hope to have (at the very least) small group face-to-face meetings but rest assured, the course can carry on as planned even if direct meetings prove impracticable. (I have delivered entire courses electronically before, I stress.)**

## Lecture Content and Readings

Asterisked items below are available from JSTOR. All other journal items should be available via the electronic journals access facilitated by the Library / MyEd. Any problems, do please let me know.

## Main texts:

**\*\*\* Please note: electronic alternatives to print resources can always be provided if (e.g.) the Main Library proves difficult of access. There is no irreplaceable reading that is only available in print. As always, please ask if I can help at all. \*\*\***

This is a research-led course, driven by my ongoing monograph and spin-off articles on sundry aspects of time travel.

Just recently (2018 and 2020 respectively), the Oxford University Press have published Ryan Wasserman's *Paradoxes of Time Travel* and Nikk Effingham's *Time Travel: Probability and Impossibility*, the first full-length books on the philosophy of time travel. Both books can be recommended in their entirety and should be available (again in their entirety) electronically via the Main Library. (My review of Wasserman appeared in *Analysis* in 2018. By the time the course is actually delivered, my review of Effingham should also be available, again from *Analysis*.)

This next is still probably the best available introduction to space and time in general:

- Barry Dainton, *Time and Space*, Chesham, Acumen, 2001, second edition Durham Acumen 2010, multiple copies should be available in the Library Hub Reserve (at shelf-mark BD632 Dai).

I spent academic years 2008-2009 and 2016-17 on research-leave, working on a raft of time-travel related articles plus a book. On request, I am happy to circulate draft papers and other works-in-progress of my own. (Just *please* don't post my draft stuff anywhere – I'll just end up looking silly / even sillier. Quite where my book is after Wasserman and Effingham is another story ...)

**Please note that the following lists of readings are prioritised, with the most important / useful readings at the top. So the recommended way to tackle the suggested readings is to start at the top of each list and work downwards. If you read only one thing for each seminar, read the top one.**

### Week 1

Introducing the Debate – What is Time Travel?

The Lewisian Analysis.

Recommended reading:

- David Lewis, 'The Paradoxes of Time Travel', *The American Philosophical Quarterly*, 13, 1976: 145-52. Much reprinted in (for examples) *The Philosophy of Time*, (edd. Robin Le Poidevin and Murray MacBeath), (Oxford, Oxford University Press, 1993): 134-46 and in *Metaphysics: The Big Questions*, ed. D. Zimmerman and P. van Inwagen, (Oxford, Blackwell, 1998): 159-169. Online at: <http://www.csus.edu/indiv/m/merlinos/Paradoxes%20of%20Time%20Travel.pdf>
- AR, 'Recent Work: Time Travel', *Philosophical Books*, 44, 2003: 297-309. DOI: <http://dx.doi.org/10.1111/1468-0149.00308>

Useful background / of related interest:

- Barry Dainton, *Time and Space*, EITHER 2001 edition, Chapter 8, 110-113, 116-119; OR 2010 edition, 121-124; 127-130.

- Paul Horwich, 'On Some Alleged Paradoxes of Time Travel', *The Journal of Philosophy*, LXXII, 1975: 432-444.

### Week 2

Developments of, and Objections to, the Lewisian Analysis.

Recommended reading:

- Phil Dowe, 'The Case for Time Travel', *Philosophy*, 75, 2000, 441-451.
- William Grey, 'Troubles With Time Travel', *Philosophy*, 74, 1999: 55-70.

Useful background / of related interest:

- Jonathan Harrison, 'Dr. Who and the Philosophers or Time-Travel for Beginners', *Proceedings of the Aristotelian Society*, Supplementary Volume, 1971: 1-24.
- Jonathan Harrison, 'Analysis Problem No. 18', *Analysis*, 39, 1979: 65-66.
- Jonathan Harrison, 'Report on Analysis Problem No. 18', *Analysis*, 40: 65-9.

### Week 3

A) Introducing Relativity.

- Barry Dainton, *Time and Space*, EITHER 2001 edition, Chapters 16 and 18, 254-68, 284-300; **OR** 2010 edition, Chapters 18 and 20, 313-327; 343-367.
- Craig Bourne, *A Future for Presentism*, Oxford, Oxford University Press, 2006, Ch. 5: 141–159. (Whole book available electronically via the Main Library.)
- Robert Weingard, 'General Relativity and the Conceivability of Time Travel', *Philosophy of Science*, 46, 1979: 328-32.

Further reading:

- John Earman 1972: 'Implications of Causal Propagation Outside the Null Cone', *Australasian Journal of Philosophy*, 50, 1972: 222-237.
- Hajnal Andr eka, Judit X. Madar asz, Istv an N emeti and A. Andai, 'Visualizing Some Ideas About G odel-type Rotating Universes', (2002), draft available at: [www.math-inst.hu/pub/algebraic-logic/goduniv/goduniv11.ps.gz](http://www.math-inst.hu/pub/algebraic-logic/goduniv/goduniv11.ps.gz)
- Sean Carroll, 'Lecture Notes on General Relativity', 1997, archived at: <http://arxiv.org/abs/gr-qc/9712019>

B) G odel and the Unreality of Time

Recommended reading:

- Barry Dainton, *Time and Space*, EITHER 2001 edition, Chapter 19, 314-19; **OR** 2010 edition, 381-386.
- Craig Bourne, *A Future for Presentism*, Oxford, Oxford University Press, 2006, Ch. 8: 204–224. (Whole book available electronically via the Main Library.)
- Steven S. Savitt, 'The Replacement of Time', *Australasian Journal of Philosophy*, 72, 1994: 463-74.

Useful background / of related interest:

- Palle Yourgrau, *The Disappearance of Time: Kurt G odel and the Idealistic Tradition in Philosophy*, Cambridge, Cambridge University Press, 1991.
- Palle Yourgrau, *G odel Meets Einstein: Time Travel in the G odel Universe*, La Salle / Chicago, Open Court, 1999.
- Palle Yourgrau, *A World Without Time: The Forgotten Legacy of G odel and Einstein*, New York, Basic Books, 2005.

### Week 4

The Cheshire Cat Problem and Other Spatial Perplexities.

Recommended reading:

- Robin Le Poidevin, 'The Cheshire Cat Problem and Other Spatial Obstacles to Backwards Time Travel', *The Monist*, 88, 2005: 336-352. Access via 'Philosophy Online':  
[http://www.pdcnet.org/collection/show?id=monist\\_2005\\_0088\\_0003\\_0336\\_0352&file\\_type=pdf&page=1](http://www.pdcnet.org/collection/show?id=monist_2005_0088_0003_0336_0352&file_type=pdf&page=1)
- AR, 'Time Travel, Hyperspace and Cheshire Cats', *Synthese* 2017, online:  
<https://link.springer.com/article/10.1007%2Fs11229-017-1448-2>
- Sara Bernstein, 'Nowhere Man: Time Travel and Spatial Location', *Midwest Studies in Philosophy*, 39, 2015: 158-168

Useful background / of related interest:

- Robin Le Poidevin, 'The Chemistry of Space', *Australasian Journal of Philosophy*, 72, 1994: 77-88.
- G. J. Whitrow, 'Why Physical Space Has Three Dimensions', *The British Journal for the Philosophy of Science*, 6, (1955), 13-31.
- Cody S. Gilmore, 'Time Travel, Coinciding Objects and Persistence', *Oxford Studies in Metaphysics*, III, 2007 pre-print on-line at:  
<http://www.unomaha.edu/philosophy/TTCOandPmay05.pdf>

#### Week 5

Causal Loops Revisited (Part One): 'Jane', Jocasta, Dee and Dum.

Information Loops and Object Loops.

Recommended reading:

- Richard Hanley, 'No End in Sight: Causal Loops in Philosophy, Physics and Fiction', *Synthese*, 141, 2004: 123-52.
- Jonathan Harrison, 'Analysis Problem No. 18', *Analysis*, 39, 1979: 65-66.

Useful background / of related interest:

- Jonathan Harrison, 'Report on Analysis Problem No. 18', *Analysis*, 40: 65-9.
- Margarita R. Levin, 'Swords' Points', *Analysis*, 40, 1980: 69-70.
- Phil Dowe and Dylan Evans, 'How to 'Clone' Sexually', 1998, MS available online at: <http://www.uq.edu.au/~uqpdowe/Research/pdfs/cloning.pdf>

#### Week 6

A) Causal Loops Revisited (Part Two): Mellor and the Facts of Causation.

Recommended reading:

- D. H. Mellor, *Real Time II*, (London, Routledge, 1998), 125-135.
- Susan S. Weir, 'Closed Time and Causal Loops: A Defence against Mellor', *Analysis*, 48, 1988: 203-09.

Useful background / of related interest:

- Peter J. Riggs, 'A Critique of Mellor's Argument Against 'Backwards' Causation', *The British Journal for the Philosophy of Science*, 42, 1991: 75-86.

B) Time Travel and Non-Turing Computation.

Recommended reading:

- AR, 'On Behalf of Spore Gods', *Analysis*, 2017, online  
<https://academic.oup.com/analysis/article-lookup/doi/10.1093/analys/anx042>

- AR, 'The Big Pitowsky: Doing Infinitely Many Tasks in (Less Than) No Time At All', MS *still* in progress.

Useful background / of related interest:

- Mark Hogarth, 'Non-Turing Computers and Non-Turing Computability', *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 1994, 1: 126-138. JSTOR: <http://www.jstor.org/stable/193018>

### Week 7

Branching-Histories Time Travel.

The Autonomy Principle.

Recommended reading:

- David Deutsch and Michael Lockwood, 'The Quantum Physics of Time Travel', *Scientific American*, March 1994: 68-74.
- Theodore Sider, 'A New Grandfather Paradox?', *Philosophy and Phenomenological Research*, LVII, 1997: 139-144.
- John Abbruzzese, 'On Using the Multiverse to Avoid the Paradoxes of Time Travel', *Analysis*, 61, 2001: 36-38.

Useful background / of related interest:

- Timothy Chambers, 'Time Travel: How Not to Defuse the Principal Paradox', *Ratio*, 12, 1999, 296-301.
- Phil Dowe, 'The Coincidences of Time Travel', *Philosophy of Science*, 70, 2003: 574-589.
- Kadri Vihvelin, 'What Time Travelers Cannot Do', *Philosophical Studies*, 81, 1996: 315-330.

### Week 8

The Nomological Contrivance Problem.

Bananas-Skins and Tomato-Rolling.

Recommended reading:

- Nicholas J. J. Smith, 'Bananas Enough for Time Travel?', *British Journal for the Philosophy of Science*, 48, 1997: 363-89. JSTOR: <http://www.jstor.org/stable/688068>
- Frank Arntzenius and Tim Maudlin, 'Time Travel and Modern Physics', *The Stanford Encyclopedia of Philosophy (Spring 2010 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2010/entries/time-travel-phys/>

Useful background / of related interest:

- G. C. Goddu, 'Banana Peels and Time Travel', *Dialectica*, 61, 2007: 559-72.
- Douglas N. Kutach, 'Time Travel and Consistency Constraints', *Philosophy of Science*, PSA Supplement to 70, 2003: 1098-1113, pre-print archived at: <http://philsci-archive.pitt.edu/archive/00001081/>

### Week 9

A) Travel in Multi-Dimensional Time.

Recommended reading:

- J. Meiland, 'A Two-Dimensional Passage Model of Time for Time Travel', *Philosophical Studies*, 26, 1975: 153-73.
- G. C. Goddu, 'Time Travel and Changing the Past (or How to Kill Yourself and Live to Tell the Tale)', *Ratio*, 16, 2003: 16-32.

Useful background / of related interest:

- Daniel King, 'Two-Dimensional Time: MacBeath's "Time's Square" and Special Relativity', *Synthese*, 139, 2004: 421-28.
- Judith Jarvis Thomson, 'Time, Space and Objects', *Mind*, 74, 1965: 1-27.

B) Testimony to Time-Travel.

Recommended reading:

- Roy Sorensen, 'Time Travel, Parahistory and Hume', *Philosophy*, 62, 1987: 227-236.
- Antony Flew, 'Time Travel and the Paranormal', *Philosophy*, 63, 1988: 266-8.

*Week 10*

A) Free Will and Determinism

Recommended reading:

- Stephanie Rennick, 'Things Mere Mortals Can Do, But Philosophers Can't', *Analysis* 75, 2015:22-26
- David King, 'Time Travel and Self-Consistency: Implications for Determinism and the Human Condition', *Ratio*, 12, 1999: 270-8.

Useful background / of related interest:

- Gordon Park Stevenson, 'Time Travel, Agency, and Nomic Constraint', *The Monist*, 88, 2005: 396-412. Access via Philosophy Online:  
[http://www.pdcnet.org/collection/show?id=monist\\_2005\\_0088\\_0003\\_0396\\_0412&file\\_type=pdf](http://www.pdcnet.org/collection/show?id=monist_2005_0088_0003_0396_0412&file_type=pdf)

B) Personal Identity

Recommended reading:

- Douglas Ehring, 'Personal Identity and Time Travel', *Philosophical Studies*, 52, 1987: 427-433. Online at:  
<http://www.springerlink.com/content/w72521356m22h217/fulltext.pdf>

Useful background / of related interest:

- John Wright, 'Personal Identity, Fission and Time Travel', *Philosophia* 34, 2006: 129-42.

*Week 11*

Recapitulation / Revision.

## Assessment Information

This course will be assessed by means of two essays per student.

1. A short (no more than 1,500 word) essay (40% overall mark):

Due no later than **12 pm on Thursday 25<sup>th</sup> February 2021**

2. A final long (no more than 2,500 word) essay (55% overall mark):

Due no later than **12 pm on Thursday 15<sup>th</sup> April 2021**

**3. Please note 5% of the total mark is based on participation. Participation marks will be awarded on the basis of your course organiser's assessment of frequency and quality of contribution, in accordance with the Common Marking Scheme guidelines and the accompanying grade descriptors. Contributions can be made electronically, e.g. via e-mail and can include (e.g.) questions (in class or outside, short comprehensions on assigned readings, etc. Closing date is the end of teaching in the semester concerned.**

**OR:**

**Only for students doing a long essay for the coursework dissertation option:**

A 5000 word essay (100% of the overall mark):  
Due no later than **12 pm on Tuesday 13<sup>th</sup> April 2021**

**Please notify the Teaching Office as to which course you will be completing the dissertation in no later than 12 pm Monday 22<sup>nd</sup> February 2021.**



## Essay Questions

Below are some suggested questions intended to cover *both* the **short mid-term** (no more than 1,500 word) and final (no more than 2,500 word) **essays**.

**Do please answer different questions for your mid-term and final essays.**

Please note that for long essay purposes, students should be prepared to supplement the suggested readings above, either through their own research and/or through consultation with course organiser. As always, additional / alternative readings can be provide on request – please just ask.

1) Did David Lewis successfully establish the logical possibility of backward time travel?

Reading as for week 1.

2) Discuss at least three objections to time-travel and explain which you find most convincing.

Reading as for week 2.

3) Did Gödel successfully argue that time is ideal?

Reading as for weeks 3.

4) Are any of the following philosophically intolerable: a) information loops, b) object loops, c) both, d) neither?

Reading as for week 5 and week 6 A).

5) Would time travel oblige us to accept the existence of many histories?

Reading as for week 7.

6) Would time travel worlds necessarily have peculiar physical laws?

Reading as for week 8.

7) Would impact might time travel have on our conceptions of freedom and personal identity?

Reading as for week 10.

**\*\*\* Again, additional / alternative readings and/or questions can always be provided on request. The above are prompts merely. \*\*\***

## Selected Additional References / Further Reading

- Jim Al-Khalili, *Black Holes, Wormholes & Time Machines*, (New York, Taylor and Francis, 1999).
- Hajnal Andr eka, Judit X. Madar asz, Istv an N emeti and A. Andai, 'Visualizing Some Ideas About G odel-type Rotating Universes', (2002), draft available at: [www.math-inst.hu/pub/algebraic-logic/goduniv/goduniv11.ps.gz](http://www.math-inst.hu/pub/algebraic-logic/goduniv/goduniv11.ps.gz)
- Frank Arntzenius and Tim Maudlin, 'Time Travel and Modern Physics', in Callender (ed.): 169-200.
- David Bacon, 'Quantum Computational Complexity in the Presence of Closed Timelike Curves', *Physical Review A*, 70, 2004: 032309, pre-print archived at: <http://arxiv.org/abs/quant-ph/0309189>
- George Berger, 'The Conceptual Possibility of Time Travel', *British Journal for the Philosophy of Science*, 19, 1968: 152-155.
- Joseph Berkovitz, 'On Chance in Causal Loops', *Mind*, 110, 2001: 1-23.
- John Bigelow, 'Time Travel Fiction', Ch. 3 of *Reality and Humean Supervenience: Essays on the Philosophy of David Lewis*, edd. Gerhard Preyer and Frank Siebelt, (Rowman and Littlefield, Lanham, Maryland, 2001): 57-92.
- Todd A. Brun, 'Computers with Closed Timelike Curves Can Solve Hard Problems', *Foundations of Physics Letters*, 16, 2003: 245-253, pre-print archived at: <http://arxiv.org/abs/gr-qc/0209061v1>
- Craig Callender, *Time, Reality and Experience*, Cambridge, Cambridge University Press, 2002.
- Carlini, V. P. Frolov, M. B. Mensky, I. D. Novikov, and H. H. Soleng, 'Time Machines: The Principle of Self-Consistency as a Consequence of the Principle of Minimal Action', *International Journal of Modern Physics*, D4, 1995: 557-580, pre-print archived at: <http://arxiv.org/abs/gr-qc/9506087v2>
- Carlini and Igor D. Novikov, 'Time Machines and the Principle of Self-Consistency as a Consequence of the Principle of Stationary Action (II): the Cauchy Problem for a Self-interacting Relativistic Particle', *International Journal of Modern Physics D*, 5, 1996: 445-80, pre-print archived at: [http://arxiv.org/PS\\_cache/gr-qc/pdf/9607/9607063v1.pdf](http://arxiv.org/PS_cache/gr-qc/pdf/9607/9607063v1.pdf)
- John W. Carroll, 'Self Visitation, Traveler Time and Non-Contradiction', MS available online at: <http://www4.ncsu.edu/~carroll/SVTTNC.pdf>
- Sean Carroll, 'Lecture Notes on General Relativity', 1997, archived at: <http://arxiv.org/abs/gr-qc/9712019>
- S. M. Carroll, E. Farhi and A. H. Guth, 'An Obstacle to Building A Time Machine', *Physical Review Letters*, 68, 1992: 263-266.
- Roberto Casati and Achille C. Varzi, 'That Useless Time Machine', *Philosophy*, 76, 2001: 581-583.
- Timothy Chambers, 'G odel's 'Time-Traveling Universes: True or 'Refreshing Surprises'?', *Transcendent Philosophy*, 6, 2005: 147-152.
- J. S. Clarke, 'Time in General Relativity', *Foundations of Space-Time Theories*, (ed. John Earman, Clark Glymour and John Stachel), *Minnesota Studies in the Philosophy of Science*, VIII, Minneapolis, University of Minnesota Press, 1977: 94-108.
- Paul Davies, *How to Build a Time Machine*, Harmondsworth, Penguin, 2001.
- Celine Denruyter, 'Jocasta's Crime: A Science-Fiction Reply', *Analysis*, 40, 1980: 71.

- S. Deser, 'Physical Obstacles to Time-Travel', *Classical and Quantum Gravity*, 10, 1993: S61-S73.
- David Deutsch, *The Fabric of Reality*, Harmondsworth, Penguin, 1997.
- Mauro Dorato, 'On Becoming, Cosmic Time and Rotating Universes', in Callender (ed.): 253-76, pre-print archived at: <http://philsci-archive.pitt.edu/archive/00000150/>
- Phil Dowe, 'The Future of Time Travel', *Philosophy and the New Millennium*, edited by M. LaCaze, Hobart, Pyrrho Press, 2000, pre-print available at: <http://www.uq.edu.au/~ugpdowe/Research/pdfs/future.pdf>
- Phil Dowe: 2007, 'Constraints on Data in Worlds with Closed Timelike Curves', *Philosophy of Science*, 74, 2007: 724–735.
- Larry Dwyer, 'Time Travel and Changing the Past', *Philosophical Studies*, 27, 1975: 341-350.
- Larry Dwyer, 'Time Travel and Some Alleged Logical Asymmetries Between Past and Future', *Canadian Journal of Philosophy*, VIII, 1978: 15-38.
- John Earman 1967: 'On Going Backward in Time', *Philosophy of Science*, 34, 1967: 211-222.
- John Earman 1995a: 'Recent Work on Time Travel', *Time's Arrows Today*, edited by Steven F. Savitt, Cambridge, Cambridge University Press, 1995: 268-310.
- John Earman 1995b: *Bangs, Crunches, Whimpers and Shrieks: Singularities and Acausalities in Relativistic Spacetimes*, Oxford, Oxford University Press, 1995.
- John Earman 1995c: 'Outlawing Time Machines: Chronology Protection Theorems', *Erkenntnis*, 42, 1995: 125-39.
- John Earman, C. Smeenk and C. Wüthrich, (2003), 'Take a ride on a time machine', manuscript available at the PhilSci Archive, University of Pittsburgh, <http://philsci-archive.pitt.edu/archive/00001673/01/TMArchive.pdf>.
- Fernando Echeverria, Gunnar Klinkhammer and Kip S. Thorne, 'Billiard Balls in Wormhole Spacetimes with Closed Timelike Curves: Classical Theory', *Physical Review D*, 44, 1991: 1077-99.
- Nikk Effingham and Jon Robson, 'A Mereological Challenge to Endurantism', *Australasian Journal of Philosophy*, 85, 2007: 633–40.
- Allen E. Everett, 'Warp Drive and Causality', *Physical Review D*, 53, 1996: 7365-68, available on-line at: [http://omnis.if.ufrj.br/~mbr/warp/etc/prd53\\_7365.pdf](http://omnis.if.ufrj.br/~mbr/warp/etc/prd53_7365.pdf)
- G. Matthew Gilmore, 'The Philosophy of Time Travel', 1997, M.A. dissertation, Dalhousie University, Canada, MS available on-line at: <http://www.collectionscanada.gc.ca/obj/s4/f2/dsk3/ftp05/mq24846.pdf>
- Kurt Gödel, 1946(a): 'Some Remarks about the Relationship between Relativity Theory and Kantian Philosophy, (\*1946/9-B2)', as in *Kurt Gödel: Collected Works, III Unpublished Essays and Lectures*, (ed. Solomon Feferman et al), New York, Oxford University Press, 1995: 230-246.
- Kurt Gödel, 1946(b): 'Some Remarks about the Relationship between Relativity Theory and Kantian Philosophy, (\*1946/9-C1)', (Feferman et al, III): 247-259.
- Kurt Gödel, 1946(c): 'Lecture on Rotating Universes, (\*1946/9b)', (Feferman et al, III): 269-287.
- Kurt Gödel, 1949: 'An Example of a New Type of Cosmological Solutions of Einstein's Field Equations of Gravitation', *Reviews of Modern Physics*, 21, 1949: 447-450, and in *Kurt Gödel: Collected Works, II Publications 1938-1974*, (ed. Solomon Feferman et al),

New York, Oxford University Press, 1990: 190-198.

- Kurt Gödel, 'A Remark About the Relationship Between Relativity Theory and Idealistic Philosophy', in P. A. Schilp (Editor), *Albert Einstein: Philosopher-Scientist*, New York, Harper and Row, Volume 2: 557-562, and in Feferman *et al*, II: 202-207.
- Kurt Gödel, 1952: 'Rotating Universes in General Relativity Theory', *Proceedings of the International Congress of Mathematicians*, American Mathematical Society, Providence, R. I., 1: 175-81, and in Feferman *et al*, III: 208-216.
- William Godfrey-Smith, 'Travelling in Time', *Analysis*, 40, 1980: 72-3.
- G. C. Goddu, 'A Useful Time Machine', *Philosophy*, 77, 2002: 281-82.
- Samuel Gorovitz, 'Leaving the Past Alone', *Philosophical Review*, 73, 1964: 360-371.
- J. Richard Gott III, *Time Travel in Einstein's Universe: The Physical Possibilities of Travel Through Time*, Boston, Houghton Mifflin, 2001.
- Stephen Hawking, 'Introductory Note to [Gödel] 1949 and 1952', Feferman *et al*, 2, 1990: 189-90.
- Stephen Hawking, 'Chronology Protection Conjecture', *Physical Review D*, 46, 1992: 603-611.
- Mark Hogarth, 'Deciding Arithmetic Using SAD Computers', *British Journal for the Philosophy of Science*, 2004, 55: 681-691.
- Dennis C. Holt, 'Time Travel: The Time Discrepancy Paradox', *Philosophical Investigations*, 4, No. 4, 1981: 1-16.
- David Horacek, 'Time Travel in Indeterministic Worlds', *The Monist*, Vol.88, 2005: 423-436.
- Paul Horwich, *Asymmetries in Time: Problems in the Philosophy of Science*, Cambridge MA, MIT Press, 1987.
- Paul Horwich, 'Explanatory Relations Between the Direction of Causation and the Fork Asymmetry', *Analysis*, 53, 1993: 154-55.
- Paul Horwich, 1995: 'Closed Causal Chains', *Time's Arrows Today*, edited by Steven F. Savitt, Cambridge, Cambridge University Press, 1995: 259-267.
- Don A. Howard, 'Einstein's Philosophy of Science', *The Stanford Encyclopedia of Philosophy*, (Spring 2004), Edward N. Zalta (editor), <http://plato.stanford.edu/archives/spr2004/entries/einstein-philsience/>
- Hud Hudson, *The Metaphysics of Hyperspace*, Oxford, Oxford University Press, 2005.
- J Ismael, 'Closed Causal Loops and the Bilking Argument', *Synthese*, 136, 2003: 305-320.
- Simon Keller and Michael Nelson, 'Presentists Should Believe in Time-Travel', *Australasian Journal of Philosophy*, 79, 2001: 333-45.
- Brian Leftow, 'On a Principle of Sufficient Reason', *Religious Studies*, 39, 2003: 269-86.
- Robin Le Poidevin, *Travels in Four Dimensions: The Enigmas of Space and Time*, Oxford, Oxford University Press, 2003.
- Michael Lockwood, *The Labyrinth of Time: Introducing the Universe*, Oxford, Oxford University Press, 2005, paperback edition 2007.
- Lossev and I. D. Novikov, 'The Jinn of the Time Machine: Non-Trivial Self-Consistent Solutions', *Classical and Quantum Gravity*, 9, 1992: 23094321.
- Robert P. McArthur and Michael P. Slattery, 'Peter Damian and Undoing the Past', *Philosophical Studies*, 25, 1974: 137-41.

- Murray MacBeath, 'Who Was Dr Who's Father?', *Synthese*, 51, 1982: 397-430.
- Murray MacBeath, 'Communication and Time Reversal', *Synthese*, 56, No. 1, 1983: 27-46.
- David B. Malament, '"Time Travel" in the Gödel Universe', *PSA: Proceedings of the Philosophy of Science Association*, 1984, 2: 91-100.
- David B. Malament, 'Minimal Acceleration Requirements for "Time Travel" in Gödel Spacetime', *The Journal of Mathematical Physics*, 26, 1985: 774-777.
- David B. Malament, 'A Modest Remark About Reichenbach, Rotation, and General Relativity', *Philosophy of Science*, 1985, 52: 615-20.
- David B. Malament, 'Introductory Note to [Gödel] \*1949b', Feferman *et al*, III, 1995: 261-269.
- David B. Malament, 'Classical Relativity Theory', archived at: <http://philsci-archive.pitt.edu/archive/00002406/>
- Ronald Mallet (with Bruce Henderson), *The Time Traveller: A Scientist's Personal Mission to Make Time Travel A Reality*, (London, Transworld Publishers / Corgi, 2008).
- Ned Markosian, 'Two Arguments from Sider's *Four Dimensionalism*', *Philosophy and Phenomenological Research*, 68, 2004: 665-73, cited here from on-line version.
- Tim Maudlin, 'Time Travel and Topology', *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 1990, 1: 303-315.
- H. Mellor, *Real Time*, Cambridge, Cambridge University Press, 1981.
- Michael B. Mensky and Igor D. Novikov, 'Three-Dimensional Billiards with Time Machine', *International Journal of Modern Physics D*, 5, 1996: 179-192, pre-print archived at: [http://arxiv.org/PS\\_cache/gr-qc/pdf/0007/0007064v2.pdf](http://arxiv.org/PS_cache/gr-qc/pdf/0007/0007064v2.pdf)
- Kristie Miller, 'Time Travel and the Open Future', *Disputatio*, I, 2005: 223-232, available on-line at: <http://disputatio.com/articles/019-2.pdf>
- Kristie Miller, 'Travelling in Time: How to Wholly Exist in Two Places at the Same Time', *Canadian Journal of Philosophy*, 36, 2006: 309-34.
- Bradley Monton, 'Presentists Can Believe in Closed Timelike Curves', *Analysis*, 2003: 199-202.
- Bradley Monton, 'Time Travel Without Causal Loops', *The Philosophical Quarterly*, 59, 2009: 54-67, (2007 pre-print version archived at: <http://philsci-archive.pitt.edu/archive/00003241/>
- Michael S. Morris, Kip S. Thorne and Ulvi Yurtsever, 'Wormholes, Time Machines and the Weak Energy Condition', *Physical Review Letters*, 61, 1988: 1446-1449.
- Paul Nahin, *Time Machines: Time Travel in Physics, Metaphysics and Science Fiction*, New York, American Institute of Physics, 1st edition: 1993, 2nd edition: 1999.
- Igor D. Novikov, 'An Analysis of the Operation of a Time Machine', *Soviet Physics - JETP*, 68, 1989: 439-443.
- Igor D. Novikov, 'Time Machine and Self-Consistent Evolution in Problems with Self-Interaction', *Physical Review D*, 45, 1992: 1989-94.
- L. Nathan Oaklander, Review of 'The Disappearance of Time: Kurt Gödel and the Idealist Tradition', *Philosophy and Phenomenological Research*, 54, 1994: 737-40.
- Josh Parsons, 'Entension, or. How It Could Happen That An Object is Wholly Located in Each of Many Places', MS on-line at: <http://www.otago.ac.nz/philosophy/Staff/JoshParsons/papers/entension2.pdf>
- Roger Penrose, 'Space-time and Cosmology', *The Tanner Lectures on Human Values*,

University of Cambridge, February 13<sup>th</sup> – 15<sup>th</sup> 1995, archived on-line at:  
<http://www.tannerlectures.utah.edu/lectures/documents/Penrose96.pdf>

- Roger Penrose, 'Gödel, Relativity, and Mind', *Journal of Physics: Conference Series*, 82, 2007: 012002.
- Joachim Pfarr, 'Time Travel in Gödel Space', *General Relativity and Gravitation*, 13, 1981: 1073-1091.
- Hilary Putnam, 'It Ain't Necessarily So', *Journal of Philosophy*, 59, 1962: 658-671.
- Peter J. Riggs, 'The Principal Paradox of Time Travel', *Ratio*, 10, 1997: 48-64.
- Gustavo E. Romero and Diego F. Torres, 'Self-existing Objects and Auto-generated Information in Chronology-violating Space-times: A Philosophical Discussion', *Modern Physics Letters A*, 16, 2001: 1213-1222, pre-print archived at: <http://arxiv.org/abs/gr-qc/0106048v1>
- Valéria M. Rosa and Patricio S. Letelier, 'Stability of Closed Timelike Curves in the Gödel Universe', *General Relativity and Gravitation*, 39, 2007: 1419–35.
- Rudy Rucker, *The Fourth Dimension, And How to Get There*, Harmondsworth, Penguin, 1986.
- Thomas A. Ryckman, 'Early Philosophical Interpretations of General Relativity', *The Stanford Encyclopedia of Philosophy*, (Summer 2008), Edward N. Zalta (ed.), <http://plato.stanford.edu/archives/sum2008/entries/genrel-early/>.
- Deshdeep Sahdev, Ravishankar Sundararaman, and Moninder Singh Modgil, 'The Gödel Universe: A Practical Travel Guide', archived at: <http://arxiv.org/abs/gr-qc/0611093>
- Leo Sartori, *Understanding Relativity: A Simplified Approach to Einstein's Theories*, California, University of California Press, 1996.
- Steven S. Savitt, 'The Replacement of Time', *Australasian Journal of Philosophy*, 72, 1994: 463-74.
- Steven S. Savitt, 'There's No Time like the Present (in Minkowski Spacetime)', *PSA: Proceedings of the Philosophy of Science Association*, 67: Supplement, Part II: S563-S574.
- Steven S. Savitt, 'Time Travel and Becoming', *The Monist*, 88, 2005.
- George N. Schlesinger, Review of *The Disappearance of Time: Kurt Gödel and the Idealistic Tradition in Philosophy* by Palle Yourgrau, *The Philosophical Review*, 102, 1993: 602-4
- Ilya Shapirovsky and Valentin Shehtman, 'Chronological Future Modality in Minkowski Spacetime', *Advances in Modal Logic*, 4, 2003: 437-59.
- G. M. Shore, 'Constructing Time Machines', *International Journal of Modern Physics*, A18 (2003): 4169-4200, archived at: <http://www.arxiv.org/abs/gr-qc/0210048>
- Theodore Sider, 'Time Travel, Coincidences and Counterfactuals', *Philosophical Studies*, 110, 2002: 115-138.
- Theodore Sider, 'Traveling in A- and B-Time', *The Monist*, 88, 2005: 329-335.
- Jonathan Simon, 'Is Time Travel A Problem for the Three Dimensionalist?', *The Monist*, Vol.88, 2005: 353-361.
- Lawrence Sklar, 'Comments on Malament's "Time Travel" in the Gödel Universe"', *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 1984, 2: 106-110.
- Mathew H. Slater, 'The Necessity of Time Travel (On Pain of Indeterminacy)', *The*

*Monist*, Vol.88, 2005: 362-369.

- J. J. C. Smart, 'Is Time Travel Possible?', *The Journal of Philosophy*, 60, 1963: 237-241.
- Nicholas J. J. Smith, 'The Problems of Backward Time Travel', *Endeavour*, 22, 1998: 156-58.
- Quentin Smith and Nathan Oaklander, *Time, Change and Freedom: Introduction to Metaphysics*, London, Routledge, 1995.
- Howard Stein, 'On the Paradoxical Time-Structures of Gödel', *Philosophy of Science*, 37, 1970: 589-601.
- Howard Stein, 'Introductory Note to [Gödel] 1949a', Feferman *et al*, II, 1990: 199-201.
- Howard Stein, 'Introductory Note to [Gödel] \*1949/9', Feferman *et al*, III, 1995: 202-229.
- Paul Thom, 'Time-Travel and Non-Fatal Suicide', *Philosophical Studies*, 27, 1975: 211-16.
- Richard Tieszen, 'Kurt Gödel and Phenomenology', *Philosophy of Science*, 59, 1992: 176-94.
- Kip Thorne, *Black Holes and Time Warps: Einstein's Outrageous Legacy*, London, Macmillan. 1994.
- Frank J. Tipler, 'Rotating Cylinders and the Possibility of Global Causality Violation', *Physical Review D*, 9, 1974: 2203-2206.
- Bas C. van Fraassen, *An Introduction to the Philosophy of Time and Space*, New York, Columbia University Press, 1970.
- Willem Jacob Van Stockum, 'The Gravitational Field of a Distribution of Particles Rotating About An Axis of Symmetry', *Proceedings of the Royal Society of Edinburgh*, 57, 1937: 135-54.
- Achille C. Varzi, 'Foreword', *The Monist*, 88, No. 3, 2005: 325-28.
- Kadri Vihvelin, 'What Time Travelers Cannot Do', *Philosophical Studies*, 81, 1996: 315-330.
- Matt Visser, 'Traversable Wormholes: Some Simple Examples', *Physical Review D*, 39, 1989: 3182-3184.
- Matt Visser, 'From Wormhole to Time Machine: Comments on Hawking's Chronology Protection Conjecture', *Physical Review D*, 47, 1993: 554-565, pre-print archived at: [http://arxiv.org/PS\\_cache/hep-th/pdf/9202/9202090v2.pdf](http://arxiv.org/PS_cache/hep-th/pdf/9202/9202090v2.pdf)
- Matt Visser, 'Van Vleck Determinants: Traversable Wormhole Spacetimes', *Physical Review D*, 49, 1994: 3963-3980.
- Matt Visser, 'Traversable Wormholes: The Roman Ring', *Physical Review D*, 55, 1997: 5212-5214.
- Matt Visser, 'The Quantum Physics of Chronology Protection', (2002), archived at: [http://arxiv.org/PS\\_cache/gr-qc/pdf/0204/0204022v2.pdf](http://arxiv.org/PS_cache/gr-qc/pdf/0204/0204022v2.pdf)
- Peter B. Vranas, 'Do Cry Over Spilt Milk – Possibly You Can Change the Past', *The Monist*, 88, 2005
- Hao Wang: 1987, *Reflections on Kurt Gödel*, Cambridge, Massachusetts, MIT Press, 1987.
- Hao Wang: 1996, *A Logical Journey: From Gödel to Philosophy*, Cambridge, Massachusetts, MIT Press, 1996.
- Robert Weingard, 'On Traveling Backward in Time', *Synthese*, 24, 1972: 117-32.
- James F. Woodward, 'Making the Universe Safe for Historians: Time Travel and the

Laws of Physics', *Foundations of Physics Letters*, 8. 1995, 1-39.

- Christian Wüthrich, 'Does Modern Physics Permit the Operation of Time Machines?', MS available online at: [http://aardvark.ucsd.edu/grad\\_conference/wuthrich.pdf](http://aardvark.ucsd.edu/grad_conference/wuthrich.pdf)
- John S. Wykes, 'Comment on Quantum Theory Looks at Time Travel', archived at: <http://arxiv.org/ftp/quant-ph/papers/0507/0507052.pdf>
- Palle Yourgrau, *The Disappearance of Time: Kurt Gödel and the Idealistic Tradition in Philosophy*, Cambridge, Cambridge University Press, 1991.
- Palle Yourgrau, *Gödel Meets Einstein: Time Travel in the Gödel Universe*, La Salle / Chicago, Open Court, 1999.
- Palle Yourgrau, *A World Without Time: The Forgotten Legacy of Gödel and Einstein*, New York, Basic Books, 2005.
- O. B. Zaslavskii, 'Traversable Wormholes: Minimum Violation of the Null Energy Condition Revisited', *Physical Review D*, 76, 2007: 044017.
- Abdelghani Zeghib, 'On Closed Anti De Sitter Spacetimes', *Mathematische Annalen*, 310, 1998, 695-716.

## Selected on-line resources:

1. John Earman and Christian Wüthrich, 'Time Machines', *The Stanford Encyclopedia of Philosophy (Fall 2008 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2008/entries/time-machine/>
2. Steven S. Savitt, 'Being and Becoming in Modern Physics', *The Stanford Encyclopedia of Philosophy (Fall 2008)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/fall2008/entries/spacetime-bebecome/>

## Some articles of mine:

Over the last twenty years or so, I've published a few things on the philosophy of time travel, mainly academic articles but some popular too, as follows:

1. 'Plattner's Arrow: Science and Multi-Dimensional Time', *Ratio*, 13, 2000: 256-74.
2. 'Time-Travel Fictions and Philosophy', *American Philosophical Quarterly*, 38, 2001: 305-18.
3. 'Recent Work: Time Travel', *Philosophical Books*, 44, 2003: 297-309.
4. 'Gödelian Time-Travel and Anthropic Cosmology', *Ratio*, 17, 2004: 176-190.
5. 'Tom Baker: His Part in My Downfall. (A Philosopher's Guide to Time-Travel)', *THINK: Philosophy for Everyone*, Vol. 7, Issue 19, 2008: 35-46.
6. 'Time Travel, Parahistory and the Past Artefact Dilemma', *Philosophy*, 85, 2010: 369-73.
7. 'Time-Travel, Testimony and the 'John Titor' Fiasco', *THINK: Philosophy for Everyone*, Vol. 9, Issue 26, 2010: 7-20.
8. 'Hilbert's Inferno: Time Travel for the Damned', *Ratio*, 26, 2013: 233-49.
9. 'Achilles, the Tortoise and the Time Machine: A Carrollian Dialogue', *Journal of Philosophical Research*, 41, 2016: 651-664.
10. 'On Behalf of Spore Gods', *Analysis*, 77, 2017: 98-104.
11. 'Time Travel, Hyperspace and Cheshire Cats', *Synthese*, 2018: <https://link.springer.com/article/10.1007%2Fs11229-017-1448-2>.



## Some fictions and films:

A short word on historical precedence first: Unlike most metaphysical topics, time-travel has drawn forth rather a large fictional literature too. I used to think that H. G. Wells or Mark Twain had invented time travel fiction between them with *The Chronic Argonauts* (1888) and *A Connecticut Yankee in King Arthur's Court* (1889) respectively. Well, how wrong I was. A special mention goes to Edward Page Mitchell (1852 - 1927), who I reckon for the first writer (in English at any rate) to pen an unequivocal time travel story, complete with causal loop. The story in question was first published in 1881 and it's called 'The Clock That Went Backward', available online at:

<http://www.forgottenfutures.com/game/ff9/tachypmp.htm#clock>

Another interesting Page Mitchell nugget is 'An Uncommon Sort of Spectre', from 1879 which features what I think is the first appearance in fiction of a ghost from the future and is available here: <http://www.horrormasters.com/Text/a2228.pdf>

Both the above Page Mitchell stories can be found in a fascinating anthology edited by Chad Arment, called *About Time: The Forerunners of Time Travel and Temporal Anomalies in Science Fiction and Fantasy* (Coachwhip Press, Landisville, Pennsylvania, 2009). This anthology also includes what may be (setting definitional subtleties to one side) an even earlier tale of backward time travel, 'An Anachronism, or Missing One's Coach', published anonymously in the *Dublin University Magazine* for 1838.

Completeness and fairness alike demand that I acknowledge Enrique Gaspar, and his 1887 story *El Anacronopete*. Although not yet available in English translation (hence I haven't been able to read it, monoglot Anglophone as I regrettably am), *El Anacronopete* is due to appear in the English for the first time next year under the title *The Time Ship: A Chrononautical Journey*. See BBC News item at: <http://www.bbc.co.uk/news/world-europe-12900390>

Anyway, the following list cannot possibly claim to be exhaustive but here are a few stories I found interesting, (although I don't necessarily claim literary merit in all cases):

- Stephen Baxter, *The Time Ships*, (1995). Authorised centenary sequel to Wells' *The Time Machine*. (Features not only Wells himself but also Gödel.)
- Ray Bradbury, 'A Sound of Thunder', (1945), reprinted in *The Golden Apples of the Sun*. A classic 'change the past' tale and an intriguing meditation on historical contingency too. (With added dinosaurs.)
- John Brunner, *Times Without Number*, (1962, 1969). My favourite 'temporal police force' story – intentionally and self-consciously inconsistent, but to very clever effect.
- Richard Cowper, 'The Hertford Manuscript', (1976) in Cowper's collection *The Custodians*. Purports to offer a critical edition of a manuscript of 19<sup>th</sup> century authorship retrieved from the 17<sup>th</sup> century.
- John Crowley, 'Great Work of Time', (1989), reprinted in Crowley's collection *Novelty*. Pushes the notion of changing history about as far as it can possibly go ... and a bit further.
- Lester Del Rey, 'My Name is Legion', (1942), reprinted in *The Best of Lester Del Rey*. Perhaps the pinnacle of multi-occupancy stories – also contains some

- intriguing advice on what to do with (the obviously then still-living) Adolf Hitler.
- Philip K. Dick, 'A Little Something for Us Tempunauts', (1974), reprinted in *The Collected Short Stories of Philip K. Dick, 5: We Can Remember It for You Wholesale*. Genuinely disturbing (to this reader at least) fusion of time travel and eternal recurrence.
  - Robert A. Heinlein, "\_\_\_ All You Zombies \_\_\_", (1953), reprinted in Heinlein's collection *The Unpleasant Profession of Jonathan Hoag*. Now a bit dated and in some respects regrettably of its time but justly famous for introducing 'Jane', the hermaphroditic, inadvertently self-fertilising time-traveller.
  - Henry James, *The Sense of the Past*, unfinished but posthumously published in 1917. Reprinted in 2006 in *The Sense of the Past: The Ghostly Stories of Henry James*. One of the earliest stories to feature backward time travel.
  - Kate Mascarenhas, *The Psychology of Time Travel*, (2018), totally gripping and insightful murder mystery set in an alternative world in which time travel was discovered in the late 1960s. Also has an exceptionally witty and apt glossary, (yes really).
  - Michael Moorcock, *Behold the Man*, (1969), original short story version appears in *Moorcock's Book of Martyrs*. Centred on a remarkable feat of historical impersonation. (I say no more.)
  - Audrey Niffenegger, *The Time Traveler's Wife*, (2004). Very intriguing attempt at depicting (with complete consistency) a life whose personal time is very convoluted indeed. Lewis might well have applauded.
  - Christopher Priest, *The Space Machine*, (1976). Rumbustious fusion of Wells' *The Time Machine* with Wells' *The War of the Worlds*.
  - Christopher Priest, 'Palely Loitering', (1979), reprinted in Priest's collection *An Infinite Summer*. Poignant tale of revisited chances that also oddly anticipates real physical speculation about (e.g.) time-travel by Alcubierre warp-tube (of which more anon).
  - Wilson Tucker, *The Year of the Quiet Sun*, (1970). Oddly convincing depiction of government-funded time travel used as an instrument for short-range political forecasting.
  - Mark Twain, *A Connecticut Yankee at King Arthur's Court*, (1889). Transmigration of epochs, no less – transplants a then-contemporary American to the British Dark Ages, and all quite independently of Wells' efforts.
  - H. G. Wells, *The Chronic Argonauts*, (1888). Rather rough-and-ready first attempt at *The Time Machine* – an attempt which Wells later tried to suppress. Rather messy and clunky but does contain one of the very first causal loops in English literature. Available at: [http://www.colemanzone.com/Time\\_Machine\\_Project/chronic.htm](http://www.colemanzone.com/Time_Machine_Project/chronic.htm)
  - H. G. Wells, *The Time Machine*, (1895). Maybe not *entirely* the original but still the best. Accept no imitations. Rather well filmed in 1960.

Likewise, a few time-travel films seemed interesting to me too:

- *La Jetée*, (1962), written and directed by Chris Marker. Beautiful, haunting short film told almost (but not quite) entirely in stills.
- *12 Monkeys*, (1995), written by David Peoples and Janet Peoples, directed by Terry Gilliam, (inspired by Marker's *La Jetée*). Perhaps the best fictional exemplification of David Lewis's classic analysis yet devised.

- *Primer*, (2004), written, directed and produced by Shane Carruth. Not at all Lewisian but thoroughly intriguing – watch it at least twice, ideally the second time with director’s commentary, some string and a notepad handy
- *Time Crimes (Los Cronocrimenes)*, (2007), written and directed by Nacho Vigalondo. Also thoroughly Lewisian, albeit to some very strange, *film noir-ish*, ends. Another “watch at least twice” job.
- *Predestination* (2016), written and directed by the Spierig brothers, based on Robert Heinlein’s short story ‘\_\_\_ All You Zombies \_\_\_’. A remarkable (and basically Lewisian, I think) adaptation of a story that I had hitherto (wrongly) thought was basically unfilmable.

I am always in the market for more recommendations however.

## Feedback

It’s very important that you should know what sort of standard of feedback you can expect on my courses and how quickly I aim to turn work around. I aim to make my feedback as useful as I can and to help you pinpoint not only those areas where improvement might be indicated but also those areas where you’ve done well. Please note that besides written feedback on summative work and draft work, you can also obtain feedback by making an appointment to see me, by sending me questions or concerns via e-mail.

For **short or long essays**, I aim to complete coversheets and return work electronically within **three working weeks** of initial submission.

If you’ve any questions relating to feedback or any other aspect of the course, please don’t hesitate to get in touch.

## Please Note

This course is completely independent of my Honours core course ‘Metaphysics (Philosophy of Time)’. Some topics inevitably may reflect each other across the two courses but neither course is required for the other.