

Engineering Research Skills

Researching literature and using online resources



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In this session

- Why review literature?
- Locating resources
- Search techniques
- *Have a go!*
- Academic language
- Referencing and avoiding plagiarism
- Q&A
- Further help

“Ever since Sir Isaac Newton's times,
scientists have worked in the same sort of way:

They show a great respect
for **experiment and observation**, they don't
cherry pick data, they take a **sceptical** approach
to what they do.

And then scientists work together to get
a consensus as to what should be believed.

And that generates very **reliable**
knowledge and that reliable knowledge
drives **innovation**. ”

- *Paul Nurse, Chancellor of the University of Bristol
Newsnight, 30th March 2011*





*"If I have seen further than others, it is by **standing upon the shoulders of giants**."*

- Science defies common sense – it needs testing
- Extraordinary claims need extraordinary evidence
- Science builds on the work of others
- Science is uncertain
- Science and consensus

Why review?

- To make sure you are not re-inventing the wheel.
- Allows you to demonstrate how your work is situated within, builds upon, and departs from earlier publications.
- It shows that you are a member of your chosen field.
- A researcher should have previous knowledge of previous work on a topic before undertaking any investigation.
- Past studies can contribute to the improvement of new studies.

We have...

- 45,000 metres of stock
- Over 700,000 ebooks
- 1000s of ejournals
- 100s of databases

But also...

- Standards
- Patents
- Dissertations/Theses
- Open Access material
- Useful websites



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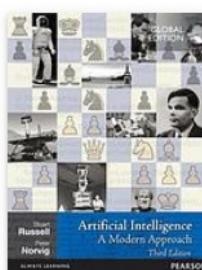
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 [Artificial intelligence : a modern approach](#)

Authors: [Stuart J Russell \(Stuart Jonathan\)](#), (Author), [Peter Norvig](#) (Author)

 eBook 2016, Third edition.
Harlow, England : Pearson Education, 2016.

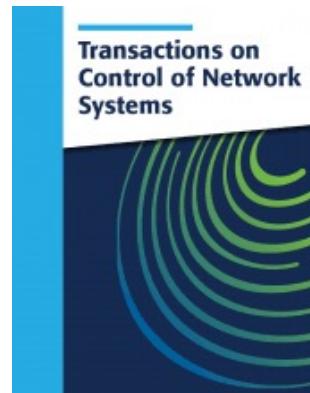
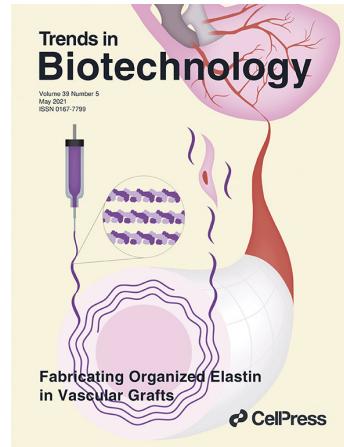
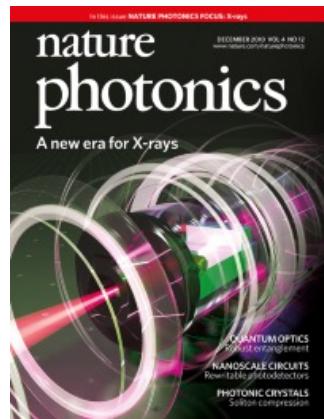
Summary: For one or two-semester, undergraduate or graduate-level courses in [Artificial Intelligence](#). The long-anticipated revision of this best-selling text offers the most comprehensive, up-to-date introduction to the theory and practice of [artificial intelligence](#).

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Coverage (Human vs machine curated)

Authority

Number of hits (quantity ≠ quality)

Relevance (subject focus)

Search features and added functions

Free access to Published/'paid for' materials

Why use
Library
Databases

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- Reports
- Discussion papers/Working papers
- Theses and dissertations
- Newsletters
- Market reports
- Govt. documents
- Statistical sources
- Standards and patents

Other
sources

Google Scholar

Google Scholar is useful for obtaining a broad picture.

- Fast, user friendly, familiar
- Good for *grey literature*
- Useful results, good starting point

However there are some key limitations

- Not all scholarly content, not peer-reviewed
- Can easily miss important research
- Advanced searching is limited



LibKey Nomad



Volume 13, Issue 1
April 2020

Article Contents

Abstract

The Legal Determinants of Health and the *Lancet*–O’Neill Report: Background and Framing

The Idea of Law in the *Lancet*–O’Neill Report

‘The Legal’ within the Political Determinants of Health

Conclusions: Laws as Means; Better, Fairer Global Health as an End

Acknowledgements

References

< Previous Next >



Legal, Moral and Political Determinants within the Social Determinants of Health: Approaching Transdisciplinary Challenges through Intradisciplinary Reflection

John Coggon 

Public Health Ethics, Volume 13, Issue 1, April 2020, Pages 41–47,
<https://doi.org/10.1093/phe/phaa009>

Published: 03 May 2020

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Abstract

This article provides a critical analysis of ‘the legal’ in the legal determinants of health, with reference to the *Lancet*–O’Neill report on that topic. The analysis shows how law is framed as a fluid and porous concept, with legal measures and instruments being conceived as sociopolitical phenomena. I argue that the way that laws are grounded practically as part of a broader concept of politics and evaluated normatively for their instrumental value has important implications for the study of law itself. This, in turn, has implications for how we approach the transdisciplinary ambitions that form a key part of the report’s recommendations to enhance law’s capacity to promote better, more equitable population health at local, national, international and global levels.

Issue Section: Special Symposium: The Legal Determinants of Health

The Legal Determinants of Health and the *Lancet*

An advertisement banner for the journal 'public health ethics'. It features a small thumbnail image of the journal cover at the top, followed by the journal title 'public health ethics' in white text. Below that is a large red button with white text that reads 'READ THE LATEST ISSUE'. To the right of the text is a circular icon containing a white document symbol. At the bottom right of the banner, the word 'Advertisement' is written in small white text.

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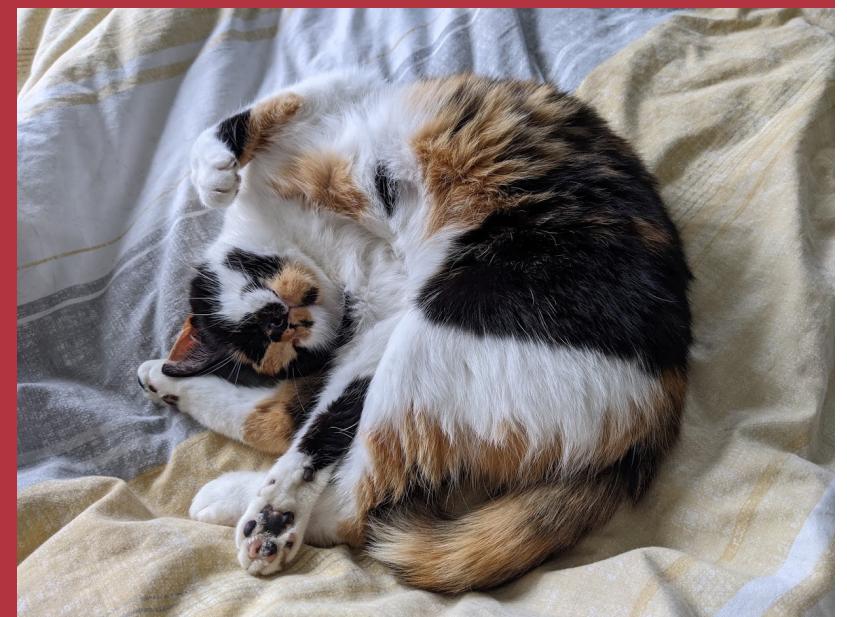
Recommended

Have a go! (5 minutes)

- Write down as many keywords (search terms) as you can, to describe your area of research.

e.g. Calico cats in folklore

calico, tortoiseshell, tri-colour
mythology, folklore, history, superstition

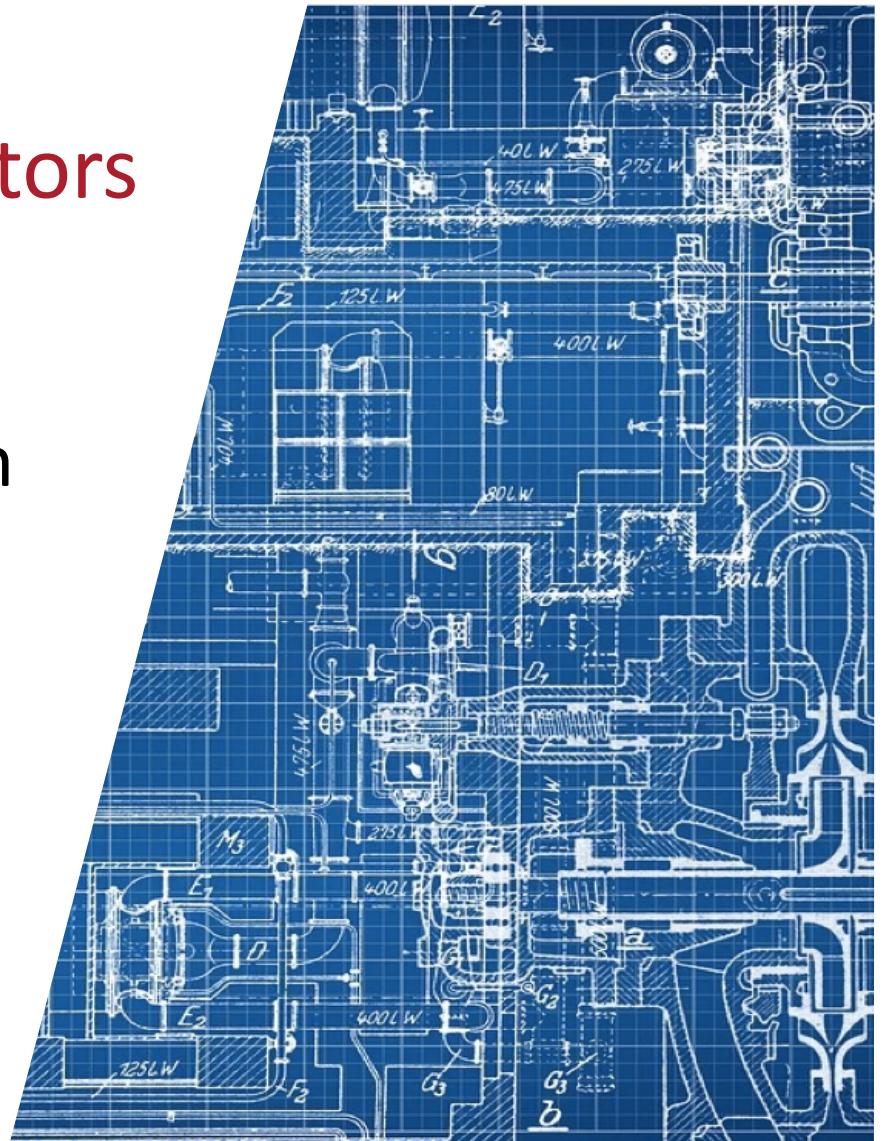


Combining terms with operators

AND – **narrows** a search by finding results that *only* contain multiple terms

OR – **broadens** a search by finding results that contain *any single term*

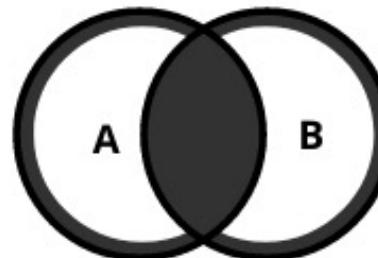
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Boolean Operators

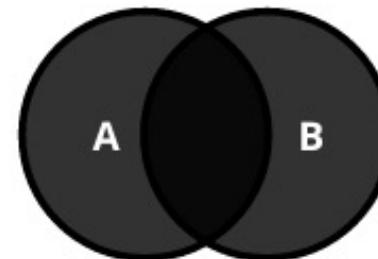
AND

Only results that contain both keywords



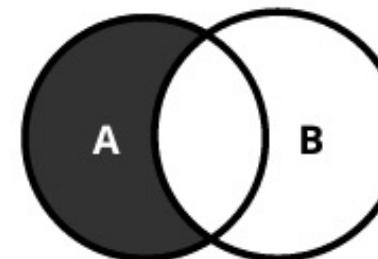
OR

Results containing keywords A or B



NOT

Results containing keyword A, excluding any with keyword B



Tips and tricks

NB – these tips vary between databases. Check the Help menu of a database if you're uncertain

Phrase searching
“social media”

looks for the exact phrase **social media**

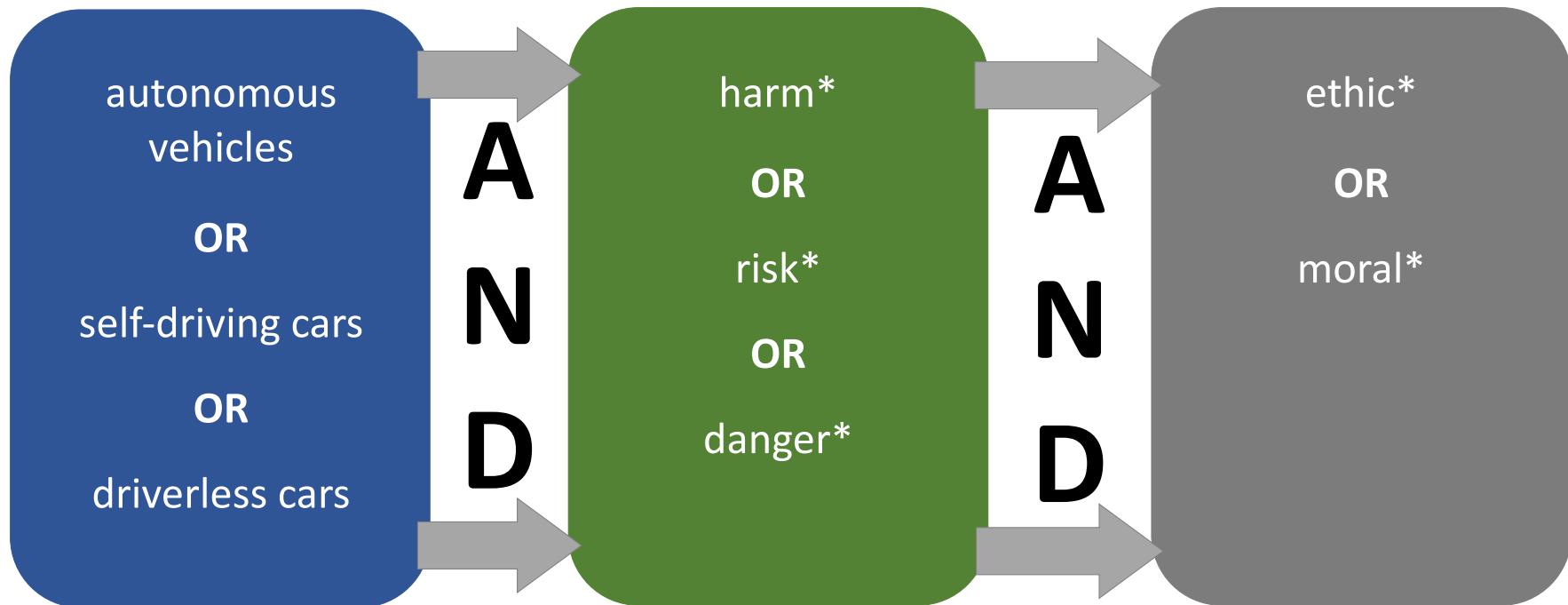
Wildcards – usually a ?
organ?ation
finds **organisation** and **organization**

Truncation – usually a * symbol
teen*

finds all words beginning **teen...**

Proximity – **NEAR/x** or similar
portray* NEAR/3 poverty
finds incidents where the term **portray*** appears **within 3 words** of the term **poverty**

So a combined search might look like this...





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Read the abstract – is it relevant? – ***Coverage***

Is it free of errors backed up by reliable sources? - ***Accuracy***

Who wrote it? Expert? Academic? Corporation? - ***Authority***

Bias? Commercial interest? - ***Objectivity***

When was it published? - ***Currency***

Reviewing and evaluating

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“The first principle is that you must not fool yourself and **you are the easiest person to fool.**”

“It is of great value to realise that we **do not know the answers** to different questions. This attitude of mind - this **attitude of uncertainty** - is vital to the scientist, and it is this attitude of mind which the student must first acquire.”

(Richard Feynman)

Be
sceptical

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Have a go! (20 minutes)

- Use your keywords to explore some resources e.g.
 - Library Search
 - Browzine
 - Databases
 - Google scholar



Activity feedback...

Which resource have you found useful and will look at again in your research?



Academic language

Being critical

Comparing

Contrasting

Conjecturing

Describing trends

Causality

Defining

Classifying

Academic phrasebank: phrasebank.manchester.ac.uk/

Metadiscourse

Elements of your review that do not add specific content, but are intended to reveal organisation and help readers through your text.

- ***The first part of this review*** traces the early development of satellite communications.
- The military uses of communication satellites ***will be taken up in the next section.***
- ***This section examines*** studies in the use of satellites in global command and control systems.

...build up a relationship with your reader, engage them.

Referencing & plagiarism

Plagiarism (and how to avoid it)

Q. *What is plagiarism?*

Plagiarism is the representation of previous work as your present work.

It can be **deliberate** or **unintentional**

Plagiarism (n.d.) Available at:

<https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism> [accessed 15 November 2021].

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Copy and Paste

Common causes of plagiarism

Most cases of plagiarism are **unintentional** – they usually result from not knowing:

- *Why* to reference
- *When* to reference
 - or
- *How* to reference

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Copy and Paste

When should I cite?

Always provide a reference for information or ideas (except general/common knowledge) that you encountered in someone's work

This includes data, graphs, images, and more – not just written words!

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General & common knowledge

1. Facts expected to be known by any competent adult member of the public

This is **general knowledge**. An example might be: 'Boris Johnson is the current Prime Minister of the United Kingdom'.

2. Facts likely to be known by someone studying or working in a particular field

This is **common knowledge**. An example (**for Law**) might be: 'England and Wales share a common law legal system, while Scotland has a mixed legal system'.



Three ways of using sources

In an essay you'll likely use sources in three different ways: **quoting**, **paraphrasing**, and **summarising**

It's important to understand the difference between them, and different reference requirements of each

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Which is which?

1. According to Simone de Beauvoir '[o]ne is not born, but rather becomes a woman' (1997: 295), by which she meant. This is a quote! Be sure to give the page number

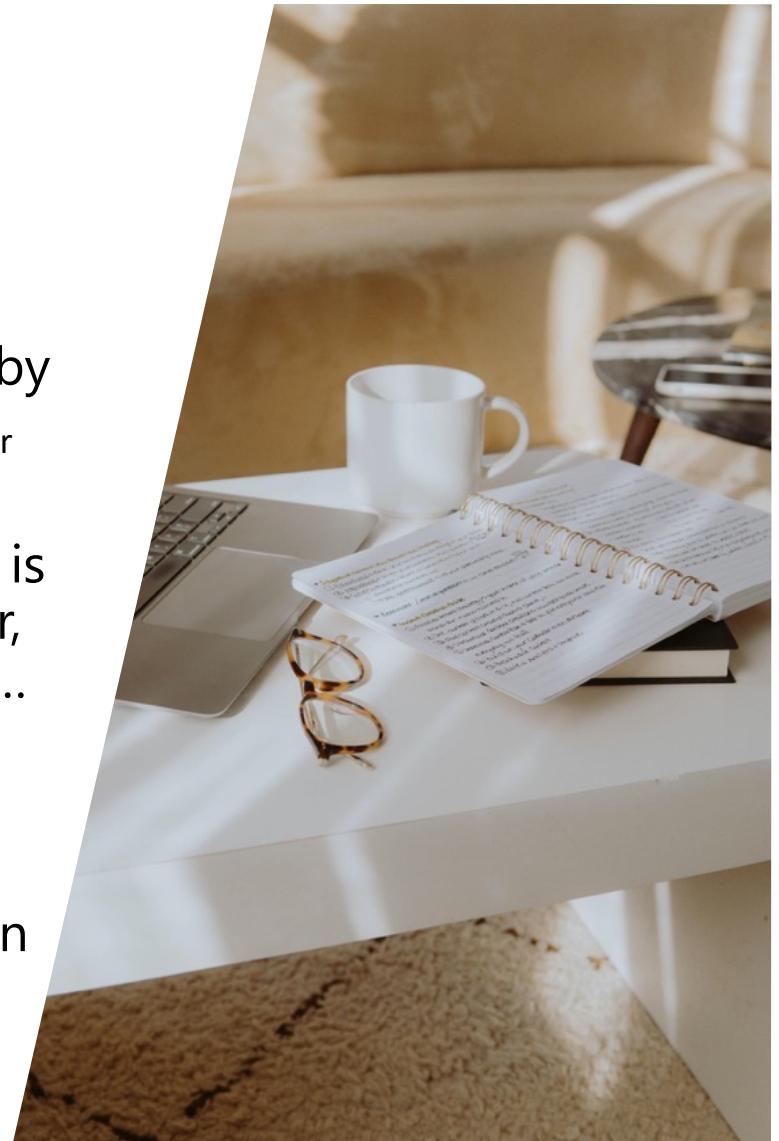
2. Certain authors have argued that womanhood is the result of female socialisation (e.g. de Beauvoir, 1997), while other writers are of the opinion that...

This is summarising: giving a passing mention

3. Simone de Beauvoir famously claimed that females are not born as women, but instead become them through the process of socialisation (1997).

This is paraphrasing: more depth, but still your own words

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Cite Them Right

citethemright

An online resource that provides detailed guidance on the layout of citations and bibliographies

Includes a large range of resource formats and referencing styles

<https://www.citethemrightonline.com/>

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The screenshot shows the homepage of the Cite Them Right website. At the top right, there is a navigation bar with links for HOME, BASICS, BOOKS (with a dropdown arrow), JOURNALS (with a dropdown arrow), and DIGITAL & INT'L. Below the navigation bar is a search bar with the placeholder text "Search by source type e.g. book, journal, web page" and a magnifying glass icon. The main content area has a dark background with white text. It features a heading "Show me how to reference" and a "Popular pages" section with four bullet points: Printed books, Web pages, Journal articles, and Electronic books. At the bottom, there is a "My pages" section with the text "Bookmark your favourite pages. Your top three links will be displayed here for quick access."

EndNote

- EndNote is a reference management software that allows you to store PDFs, quickly cite, and create a bibliography
- Alternatives include Zotero and Mendeley

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<https://www.bristol.ac.uk/library/subject-support/referencing/endnote/>*

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- Philosophy of Biol... 56
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- Sec. Lit. on Heideg... 61
- Sec. Lit. on Jonas 123

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	Author	Year	Title
●	Barrett, S.	2008	The Incredible Economics of Geoengineering
○	Baum, S. D.; Maher, T. M.; Haqq...	2013	Double Catastrophe: Intermittent Stratospheric Geoengineering
○	Beckwith, P.	2016	COP21: Paris Deal Far Too Weak To Prevent Devastating Global Warming
○	Berdahl, M.; Robock, A.; Ji, D.;...	2014	Arctic Cryosphere Response in the Geoengineering Model Intercomparison Project
○	Bunzl, M.	2008	An Ethical Assessment of Geoengineering
○	Science Media Centre	2015	Expert Reaction to Agreement at Paris COP-21
○	Cicerone, R. J.	2006	Geoengineering: Encouraging Research and Overseeing Implementation
○	Crutzen, Paul J.	2006	Albedo Enhancement by Stratospheric Sulfur Injections: A Contribution to Resolve the Climate Problem?
○	Fleming, J. R.	2007	The Climate Engineers
○	Gardiner, S. M.	2010	Is Arming the Future with Geoengineering Really the Less Bad Option?
○	Gardiner, S. M.	2013	Why Geoengineering is Not a 'Global Public Good', and What It Means for Governance
○	ETC Group	2010	Geopiracy: The Case Against Geoengineering
○	Hale, B.	2012	The World That Could Have Been: Moral Hazard Argument
○	Heckendorf, P.; Weisenstein, D.;...	2009	The Impact of Geoengineering Aerosols on Stratospheric Temperature
○	IPCC	2012	Meeting Report of the Intergovernmental Panel on Climate Change Working Group I
○	Jamieson, D.	1996	Ethics and Intentional Climate Change
○	Jones, A.; Haywood, J. M.; Alters...	2013	The Impact of Abrupt Suspension of Solar Radiation Management
○	Kellogg, W. W.; Schneider, S. H.	1974	Climate Stabilization: For Better or for Worse?
○	Kiehl, J.	2006	Geoengineering Climate Change: Treating the Symptom or the Disease?
○	Kosugi, T.	2012	Fail-Safe Solar Radiation Management Geoengineering
○	Kroeker, K. J.; Kordas, R. L.; Cri...	2010	Meta-Analysis Reveals Negative Yet Variable Effects of Ocean Acidification on Benthic Calcifiers
○	Lenton, T. M.; Vaughan, N. E.	2009	The Radiative Forcing Potential of Different Climate Geoengineering Options
○	Lipshner, S.	2008	Scientist's Aim: Alter Weather
○	Matthews, H. D.; Caldeira, K.	2007	Transient Climate-Carbon Simulations of Planetary Geoengineering
○	McCormick, M. P.; Thompson, L....	1995	Atmospheric Effects of the Mt Pinatubo Eruption
○	Ipsos MORI	2010	Experiment Earth? Report on a Dialogue on Geoengineering
○	Morrow, D. R.	2014	Why Geoengineering is a Public Good, Even if it is Bad
○	Preston, C. J.	2013	Ethics and Geoengineering: Reviewing the Moral Issues Regarding the Use of Geoengineering
○	Robock, A.	2002	The Climatic Aftermath
○	Robock, A.	2008	20 Reasons Why Geoengineering May Be a Bad Idea
○	Robock, A.; Bunzl, M.; Kravitz, B.	2010	A Test for Geoengineering?
○	Schelling, T. C.	1996	The Economic Diplomacy of Geoengineering
○	Schneider, S. H.	2008	Geoengineering: Could We or Should We Make it Work?
○	Scott, D.	2012	Geoengineering and Environmental Ethics
○	Shepherd, J. G.	2012	Geoengineering the Climate: An Overview and Update
○	The Royal Society	2009	Geoengineering the Climate: Science, Governance and Uncertainty
○	The Royal Society	2011	Solar Radiation Management: The Governance of Geoengineering

Author Barrett, S.

Year 2008

Title The Incredible Economics of Geoengineering

Journal Environmental and Resource Economics

Volume 39

Part/Supplement

Issue 1

Pages 45-54

Author-Date

Barrett, S. (2008) 'The Incredible Economics of Geoengineering', *Environmental and Resource Economics* 39(1), pp.45-54.

Abstract The focus of climate policy so far has been on reducing the accumulation of greenhouse gases in the atmosphere. This is a slow and costly process, and being expensive, has been hindered by free riding, so far, little action has been taken. An alternative approach is to counteract climate change by reducing the amount of solar radiation that strikes the Earth—"geoengineering." In contrast to emission reductions, this approach is inexpensive and can be undertaken by a single country, unilaterally. But geoengineering also has worrying consequences: it may harm some countries; it would not address ocean acidification; it would pose new risks. The fundamental challenge posed by this new technology is not what the technology can do, but who should decide if and under what circumstances geoengineering should be used?

Keywords Geoengineering · Climate change · Governance · Free riding

Geoengineering—which I shall take to be the deliberate modification of the climate by means other than by changing the atmospheric concentration of greenhouse gases—sounds like an idea consigned to Hollywood.¹ To most people, the suggestion seems crazy if not dangerous (Schelling 1996). For better or worse, however, it is a concept that needs to be taken seriously. As I shall explain in this paper, its future application seems more likely than not. This is partly because the incentives for countries to experiment with geoengineering, especially should

¹ Geoengineering is defined in various ways in the literature. To some, it includes planting trees to absorb CO₂. To others, it may involve carbon capture and storage, or enhancement of CO₂ by means for a comprehensive treatment. See Keith (2000). Here I focus deliberately on an option that differs fundamentally from "carbon management".

Contributor to the British Association for the Advancement of Science, I gave an overview of my new book on global public goods (Barrett 2007), of which the topic of the paper is but one example. I have used the opportunity of this special issue to expand upon and restate my brief discussion of this topic as presented in my lecture and in the first chapter of the book.

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e-mail: sbarrett@jhu.edu

Springer

66 **S. Barrett**

climate change, particularly if catastrophic, are very strong. It is also because the incentives for countries to reduce their emissions are weaker. Geoengineering and emission reductions are substitutes.

Indeed, it is mainly because geoengineering and emission reductions are substitutes that the concept lacks "broad support from scientists" (Cicerone 2006, 221).² Not all scientists welcome different research publication of a paper by Paul Crutzen, a Nobel-prize-winning chemist, on geoengineering.³ He acknowledged the feasibility of controlling the climate deliberately, the few scientists fear, undermine "human resolve to deal with the source of the original problem, greenhouse gases in the atmosphere climate change" (Cicerone 2006, 221). Cicerone maintains this view, not only because about the subject itself, but also because geoengineering is not the only way to combat climate change. He argues that the removal of greenhouse gases be cut to an extent that geoengineering would not be needed. He has only recognized the possibility of geoengineering as a backup to a strategy that is based on the prospect of emissions being reduced enough, and quickly enough, to avoid dangerous climate change.

The suggestion here is that it would be better if countries could commit themselves not to resort to geoengineering. That way, the world would have no alternative but to reduce emissions.

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It has a **Desktop** and **Online** component that can be used in conjunction or separately depending on individual needs and preferences.

Which version should I use?

The **Desktop** version comes highly recommended for **Research Postgraduates and staff**. It can be synchronised with an EndNote Online account if needed.

Tutorial: EndNote Desktop

Learn how to use EndNote Desktop effectively (requires single sign on)

Quick Guide: EndNote Online

Learn how to register and start using EndNote Online (PDF, 1,521kB)

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