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School of Arts, Design
and Architecture

Knowledge-making for sustainability (MUO-E8016)

Aalto Creative Sustainability

Spring 2019

Eeva Berglund & Mikko Jalas with Marko Keskinen

Today 17.04.2019

Course intro and requirements

Who are we and what is the course about?

How the course is run

Making knowledge and doing research to support sustainability

BREAK

Creative sustainability – knowing and doing

Information resources assignment

Introducing the next session



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What is the course about?



Ice-breaker

In pairs or threes:


- Introduce yourselves very briefly, share what experiences you have had of using and making knowledge for sustainability
- Compare your thoughts about creative sustainability



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What is the course about?

An official website of the United States government.

 United States Environmental Protection Agency


Environmental Topics Laws & Regulations About EPA

U.S. Environmental Protection Agency

CONTACT US SHARE    

April is Winning on Reducing Food Waste Month

- Read the [presidential message](#)
- EPA, USDA, and FDA Unveil Formal Strategy to Reduce Food Waste Increase Collaboration: [Read the news release](#) | [View the strategy](#)
- Learn more about [possible resources and funding opportunities related to the food system](#)



1 2 3 4

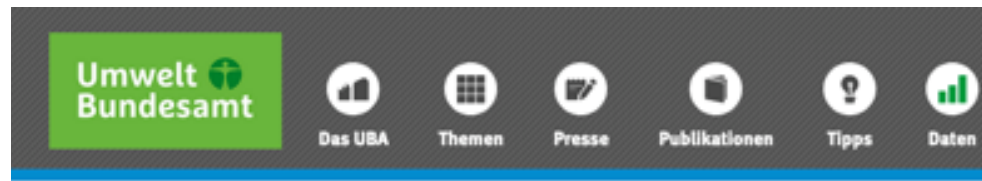
"Water issues are the largest and most immediate environmental and public health challenges affecting the world right now."
EPA Administrator Andrew Wheeler

[Read Administrator Wheeler's remarks](#) | [Watch a video of the remarks](#)



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What is the course about?



» Die vergangenen fünf Jahre waren weltweit die wärmsten

Die vergangenen fünf Jahre waren weltweit die wärmsten



Hitze und Kälte, Starkregen und Trockenheit: In den letzten Jahren gab es viele Wetterextreme
Quelle: Eric Isselée / Fotolia.com

Der weltweite Trend zu weiter steigenden Durchschnittstemperaturen hält an: 2018 war global das viertwärmste Jahr seit Beginn der regelmäßigen Wetteraufzeichnungen im 19. Jahrhundert. Damit sind die vergangenen fünf die wärmsten verzeichneten Jahre. In unserer jährlichen Chronik erfahren Sie, welche Wetterextreme 2018 und in den vorangegangenen Jahren beobachtet wurden.

09.04.2019 ★ 224 mal als hilfreich bewertet

[Links](#)



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What is the course about?

Luke
NATURAL RESOURCES
INSTITUTE FINLAND

Home Research Focus Customer Solutions Natural Resources Publications Luke Experts Statistics

Agriculture, Environment

Pre-Crop Values from Satellite Images to Support Diversification of Agriculture

Climate, Economy, Environment, Agriculture

Tree killer hiding: Novel insect vectors and host trees harbor the Dutch elm disease

Farming under a changing climate – survival of the most resilient?
Alan Schulman, a world-renowned expert on the barley genome, describes the multifaceted challenges in future fields.

Natural Resources Institute Finland promotes bioeconomy and sustainable use of natural resources.



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What is the course about?



See e.g. www.lrb.co.uk/v41/n06/jeremy-harding/among-the-gilets-jaunes

Photo: <https://www.europe1.fr/faits-divers/gilets-jaunes-a-strasbourg-un-policier-renverse-par-un-vehicule-hospitalise-3802322>



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What is the course about?



Photo Vitor Barros, Lisbon 2017

Students who successfully complete the course will be able to

- Plan and argue for their own research activities
- Sharpen their knowledge of the types of research needed for achieving environmental sustainability
- Better understand the role of knowledge in policy- and decision-making (for sustainability)

More specifically the course will help you

- Identify key features of professional and scholarly knowledge in fields relevant to CS
- Understand how and why inter-disciplinary work contributes to sustainability debates; Learn and work across and between disciplines
- Recognize and work with local, tacit and non-expert types of knowledge
- **Develop conceptual tools for discussing *socio-technical* change**
- Critically evaluate sustainability-related knowledge claims

Attendance, assignments and grading

Attendance is compulsory. If you cannot attend, let Eeva know in advance.

Do the readings *before* the sessions.

Take responsibility for being in the right place at the right time.

Assignments due by 13:00 hours as follows:

- 1) Electronic resource exercise: 23.4.
- 2) Posters (group work): 19.5.
- 3) Learning passport: 31.5.

Submit all 3 assignments on MyCourses

Grading is pass-fail

Feedback will be provided on assignment 1

Knowledge in your field: what kind of research have you encountered?

In groups of four talk for 5 minutes. We will then briefly open up discussion to everyone. Consider:

- **What kinds of knowledge do architects, designers, engineers or managers create?**
- **What kinds of knowledge help them to do their job better?**

Not all knowledge is the same

Academic knowledge is research-based and collective:

- **Structured as disciplines within internationally standard institutional types**
- **Scholarship**
- **Mode 1 or mode 2 research or mixtures of both**
- **Science, natural science and post-normal science**

Our norms: Academic / scientific / scholarly research should

- Contribute to existing debates within relevant communities of practice, at least *potentially*
 - *Research is not the same as solving problems*
- Like science in general, specific research should aim for universalism, openness ('communism'), disinterestedness, organized scepticism – the classic *Mertonian* ideals
- Be creative but disciplined
- Be clearly and appropriately presented – ideally in many different registers/ways

A research plan should

- Identify a clear research question or questions. It should also indicate that you are aware of the limits of what research can achieve.
- Show familiarity with existing research. After all, especially in the field of sustainability, research contributes to existing debates and conversations.
- Demonstrate how data will lead to insight and conclusions. (Methodology).
- Propose suitable ways of presenting findings (textual, visual, aimed at different audiences).

A Master's Thesis in CS

- CS disciplines are professional fields. A masters thesis as 'knowledge making' can be:
 - A pre-study for performing a practical task
 - Applying established/new knowledge in practice and critically examining this knowledge
 - Developing the practice (question why and how a professional field operates ... history, differences in practice, new challenges, failures ...)

What do we do when we do research?

Investigate and ask questions

Use appropriate methods, qualitative and quantitative

Describe

Analyze

Synthesize

Intervene

Generate better questions

What do we do when we do research?

Science the word may come from 'scindere' to cut, divide

- Early scientists thought of themselves as natural philosophers
- Disciplines in universities cut the world up to suit institutions

Science is often contrasted with ignorance or not knowing

Science is often thought of as the archetypical form of serious knowledge

Producing evidence in a complex world of layered socio-technical and socio-ecological systems needs specialists

Research is often poised between curiosity and funding!

Knowing and therefore science are human, historical, cultural practices



Yliopiston kirjasto, Nikolainkirkko ja päävärtio (Litografia: F. Tengström, 1838), www.kansalliskirjasto.fi/

Knowledge beyond the senses and beyond common sense



From a key thinker, Bruno Latour (1987) *Science in Action: How to Follow Scientists and Engineers Through Society*

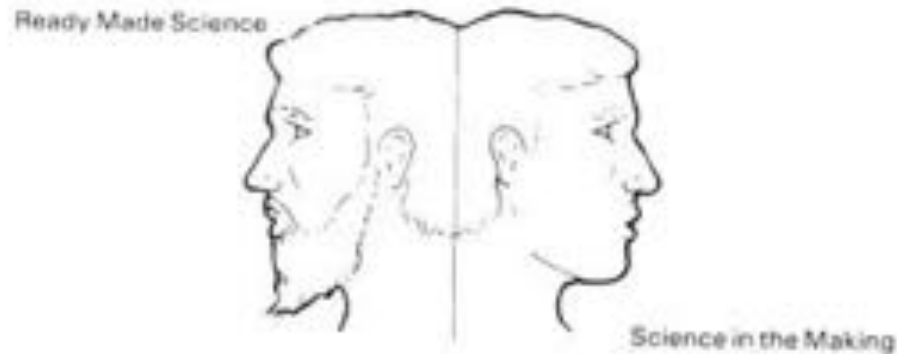
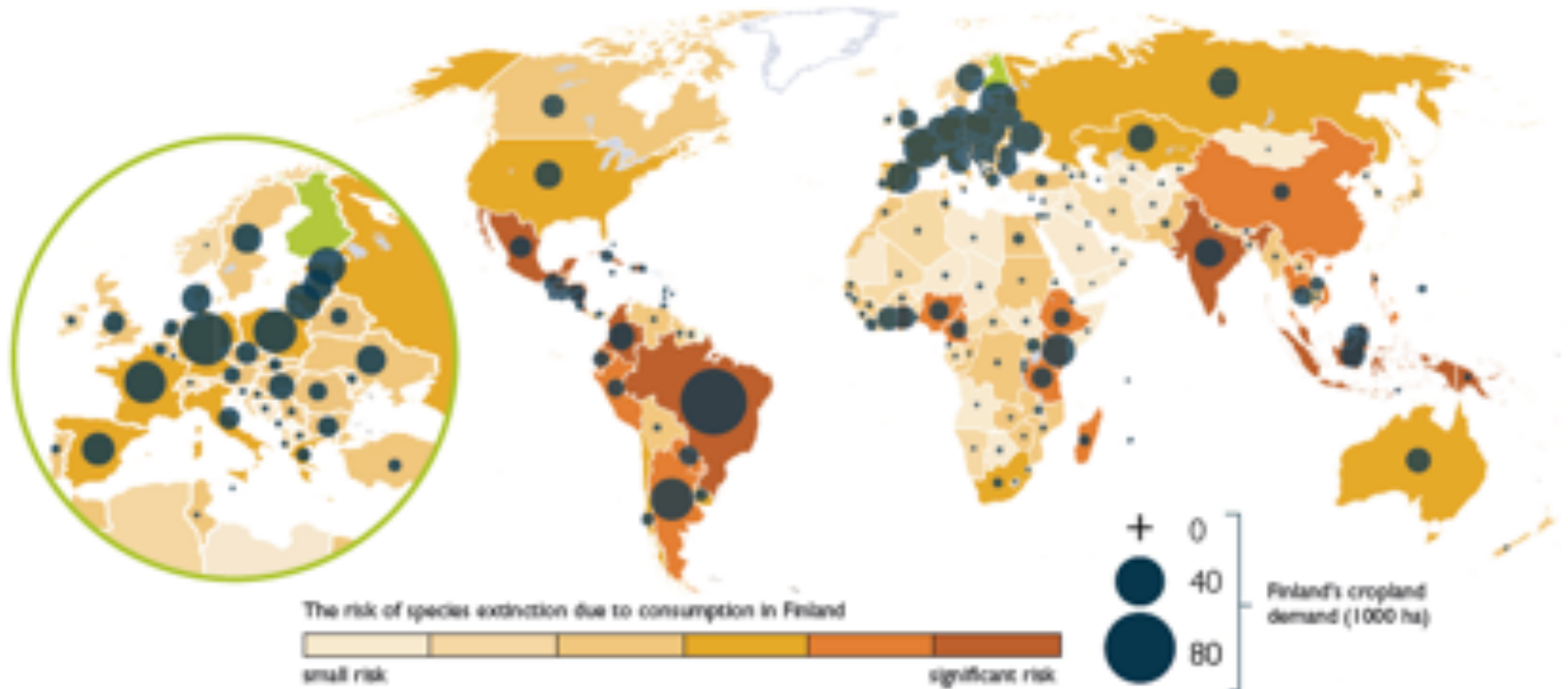


Figure 1.1

Finland has outsourced some of its environmental impact



Graph 4. Cropland area required around the world by Finnish food consumption. Clearing forest for agricultural use leads to a risk of global species loss especially in tropical countries. For example, areas where coffee and cocoa are grown have many endemic species that are susceptible to extinction. Source: Sandström et al. 2017⁹, © SYKE & SITRA

Knowing and therefore science are human, historical, cultural practices

In some respects all SK is *constructed*

- Differences are not *only* products of interests or biases

Scientific / academic / scholarly knowledge

- Codified **but also tacit and embodied**
- Authoritative **but also contingent, constructed and contested**
- Operates as infrastructure **but is also a commercial resource**
- Disciplinary **but increasingly interdisciplinary, transdisciplinary and even 'non-disciplinary'**

Richard Grove: 'Origins of Western Environmentalism' *Scientific American* 1992

Events and Ideas That Shaped Western Environmentalism

Marco Polo sets off for Far East and Japan	Christopher Columbus reaches West Indies	Portuguese claim St. Helena	Ferdinand Magellan sets out around the world	Dutch claim Mauritius	Dutch East India Company founded	British settle Barbados; auroch extinct in Poland	Dutch take Tobago	Dodo extinct in Mauritius	Redwood protection on St. Helena	British colonial empire begins in India
1271	1492	1502	1519	1598	1602	1627	1640	1670s	1713	1757
RENAISSANCE					BAROQUE					
1305	1498	1516	1560s	1600	1607	1633	1664	1677	1721	1763
Dante Alighieri starts <i>Divine Comedy</i>	Columbus sights St. Vincent and Tobago	Thomas More publishes <i>Utopia</i>	Deforestation starts in West Indies	British East India Company founded	Jamestown colony established in America	Dutch claim St. Helena	French East India Company founded; Dutch mandate forest protection in South Africa	French take Tobago	French claim Mauritius	British get St. Vincent through Treaty of Paris

Today science is in place and in motion

- See Henke and Gieryn 2008
- Where is tacit knowledge?
- How is it contingent?
- How is it commercial?
- In what ways is it disciplined?
- What makes it disciplinary?



Making knowledge - keywords

Epistemology refers to the theory of knowledge and the study of how it is produced and authorized

- The dominance of a scientific epistemology emerged through limiting the 'we' involved.
- Who is 'we' can become apparent through disputes.

Experts and professionals

- Organize and stabilize complex, technical, socially important practices like medicine, construction, etc.
- Knowledge about ***quality of life*** is variable

Remaining sessions

24.4. Marko Keskinen – Disciplinarity in practice

08.5. Mikko Jalas - What kind of research for what problems?

15.5. Eeva - Knowledge making and democracy, also presentations

22.5 Eeva & Mikko – Pathways to sustainability through research



Before we take a break...

Seminar sessions are crucial for learning

Learning and meaningful action require listening

All research involves being respectful and curious

BREAK



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What difference does 'sustainability' make to our work?

'S' can be thought to refer to contestations in professional fields

'S' is brought forward to indicate a problematic state of affairs

'S' can easily turn into outside 'expert advice'

'S' highlights need of (collective, future oriented) action and self-managed change processes

Knowing about what is sustainable

- Framing or constructing problems: What is to be sustained?
 - *What questions are asked? Who is allowed to speak? Whose norms are followed?*
- There is always also the possibility of producing ignorance
- There is always the possibility that nature or people will ‘bite back’ despite the best efforts of policy science
- => Pathways through dynamic and uncertain terrain

Normal and mostly disciplinary to post-normal and multidisciplinary

'Post-Normal science has been developed to deal with complex science related issues. In these, typically **facts are uncertain, values in dispute, stakes high, and decisions urgent**, and science is applied to them in conditions that are anything but "normal".

From Bert J. M. De Vries (2013) *Sustainability Science*



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What is the course about?

Journal of Cleaner Production 170 (2018) 1423–1432



ELSEVIER

Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro



Universities responding to the call for sustainability: A typology of sustainability centres



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ABSTRACT

Universities worldwide are experiencing a growing trend to respond to the need for sustainability. Sustainability centres are one key aspect in the sustainability transitions of universities. Until currently, these centres have been relatively neglected by research. This exploratory study makes a solid contribution to the scholarship and understanding of the various means by which universities are responding to the societal challenge of sustainability by analysing a sample of 44 sustainability centres across the world to increase understanding of the characteristics and roles of these centres in contributing to sustainability. Furthermore, the study identifies four types of centres differing in their goals, objects, scope and scale of research, knowledge production and outreach activities. The typology of the centres can be applied for example when new centres are established or when centres identify or redefine their profiles. The authors suggest further research concerning sustainability centres, given their central role as nodes of sustainability research, education and co-creation in sustainability transformation.



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What is the course about?



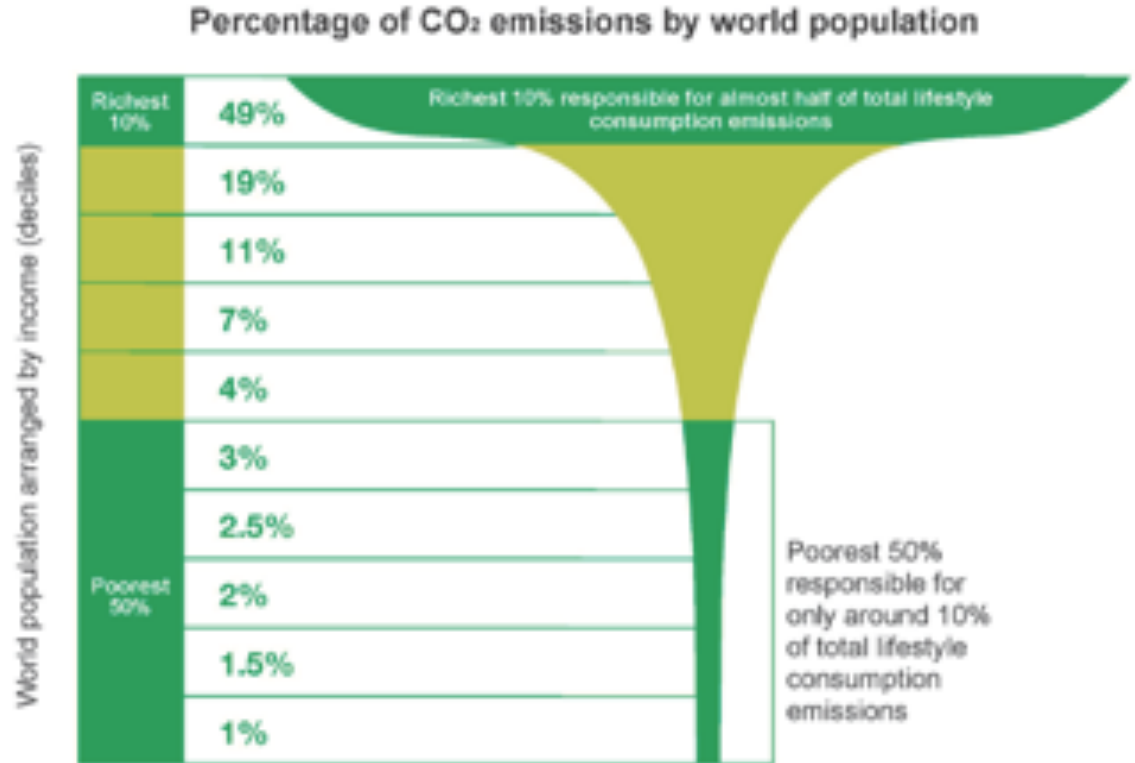
<https://www.kateraworth.com/doughnut/>



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What is the course about?

Figure 1: Global income deciles and associated lifestyle consumption emissions



Source: Oxfam



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What is the next session about?

*Working across disciplines by
Marko Keskinen*

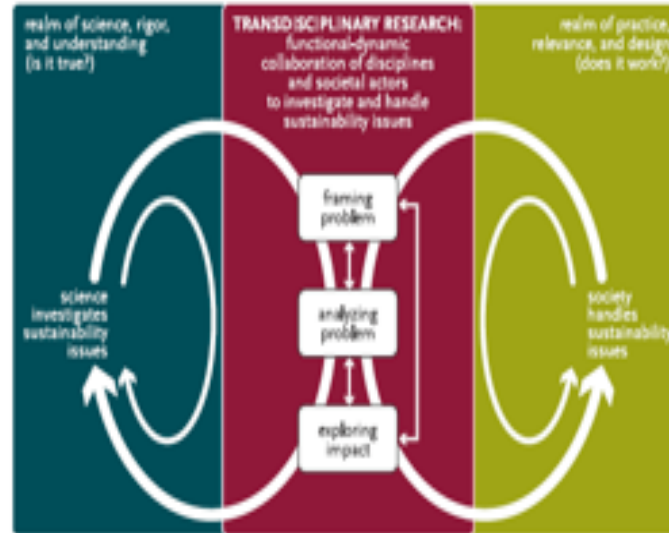


FIGURE 1: The transdisciplinary research process connects scientific knowledge production and societal problem handling (larger round arrows). Often the two processes are not explicitly related (smaller round arrows). The transdisciplinary research process consists of the stages of framing the problem, analyzing the problem, and exploring the project's impact. Projects run through the stages in different orders (thin straight and angled arrows). During these stages researchers of different disciplines collaborate and involve societal actors in a joint research and learning experience. The intensity of collaboration and involvement is functional-dynamic, i.e., it varies depending on the purpose of the specific stage (Figure 4, p. 50). Two rationalities (thought styles) meet and have to be balanced in this process: the thought style of science searching for truth and the thought style of practice interested in workability (based on Bergmann et al. 2005, Pohl and Hirsch Hadorn 2007, Krüti et al. 2010, Jahn et al. 2012); see also www.transdisciplinarity.ch/en/Transdisciplinarity.

Assignment



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Assignment: using new electronic resources

On your own,

- 1) Visit a library and select an electronic resource with which you are not familiar, and
- 2) Spend 60 minutes learning to use it. Note how much you can learn/achieve in that time.
- 3) Write up and submit a short report of your findings: the name/location of the database you used, your search techniques, results (ten most relevant literature sources)

The screenshot shows the Helka library website. At the top, there is a navigation bar with the Helka logo, links for 'SEARCH TIPS', 'ARTICLE SEARCH', and 'ABOUT', and user options for 'HOME', 'FINNA', and 'LOGIN'. Below the navigation bar is a search bar with the placeholder text 'Search library collections...' and a search button. There are also buttons for 'Advanced search' and 'Article Search'. A 'FEEDBACK' button is located in the top right corner. The main content area is divided into two columns. The left column is titled 'Books, articles and databases in Helka' and contains text about finding printed and digital books, journals, articles, and databases. It also includes a section for 'Using Article Search' and a note that Article Search also finds articles not available through Helka libraries' collections. The right column is titled 'The new Helka' and lists actions for users with a Helka library card, such as checking and updating customer information, renewing loans, making reservations, and paying fines and fees. It also mentions that users can attach their library card to their Helsinki University user account for single sign-in. Below these columns is a section titled 'News from Helsinki University Library' with a list of news items. To the right of the news list is a promotional banner for Taylor & Francis journals, featuring a person writing in a notebook and the text 'NEED ACCESS TO A TAYLOR & FRANCIS JOURNAL? ALTERNATIVE ACCESS' with a right-pointing arrow.

Books, articles and databases in Helka

The new Helka allows you to find printed and digital books, journals, articles and databases.

Searching the **library collections** you can search for electronic and printed books, journals and databases acquired for the university.

Using **Article Search** you can find international articles.

Article Search also finds articles that are not available through Helka libraries' collections.

If you have a user account for the network of the University of Helsinki, electronic books and journals acquired for the university will be directly available to you.

If you do not have a university user account, you can access electronic books and resources in the library.

The new Helka

If you have a Helka library card, you can

- check and update your customer information
- renew **your loans**
- make **reservations**
- pay fines and fees

If you sign in with a Helsinki University user account and have a Helka card, you can then attach the library card to your account and get access to both electronic resources and library card functions with a single sign in.

News from Helsinki University Library

- 15.4. [New content in Oxford Handbooks Online](#)
- 12.4. [Reading area on the 3rd floor of Kaika House is out of use on Thu, April 11th](#)
- 8.4. [Opening hours during Easter 18.4 - 22.4](#)
- 8.4. [Guidance Corner opening week at Kaika House April 9-11th, 2019](#)
- 2.4. [Tutors are adventurous at Kaika House on Thursday, April 4th](#)
- 28.3. [Artificial Intelligence Workshop! Speed up your literature discovery & review with Iris.ai 25.-26.04.2019](#)
- 26.3. [Students of Viikki! Join us in planning Infocenter Karona's renovation on April 4, 2019](#)
- 26.3. [Open Science kiosks on all campuses in April](#)
- 22.3. [Library notices lost on the way](#)
- 25.3. [Online encyclopedia of linguistics on trial until 19th April 2019](#)

NEED ACCESS TO A TAYLOR & FRANCIS JOURNAL?
ALTERNATIVE ACCESS →

The screenshot displays the Helka search interface. At the top, there is a navigation bar with the Helka logo, links for 'SEARCH TIPS', 'ARTICLE SEARCH', and 'ABOUT', and user options for 'SUOMI', 'SUENNA', and 'LOGIN'. The search bar contains the query 'origins of western environmentalism' and includes a search icon and a link to 'Advanced search'. Below the search bar, there are tabs for 'Library's collections' and 'Article Search'. A 'NARROW SEARCH' section on the left allows filtering by 'Full text available', 'Peer reviewed', 'CONTENT TYPE' (E-article, 2), 'AUTHOR', and 'YEAR OF PUBLICATION'. A bar chart shows publication frequency from 1990 to 2002. The main results area shows two items: 'Origins of Western Environmentalism' by Grove, Richard H., published in *Scientific American* 1992, and 'Grassroots Environmentalism: Origins of the Western North Carolina Alliance' by Newfont, Kathryn, published in *Appalachian Journal* 1999. A blue banner at the bottom offers options to 'GET RSS FEED', 'EMAIL THIS SEARCH', and 'SAVE SEARCH'.

Search library resources

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[Viability of Research](#)
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[/ Get Help /](#)

Alternative Access

An organisation must have a subscription to an e-journal or e-journal package so that its users can read scholarly articles that are behind a paywall. Subscriptions to journal packages are expensive, and the costs arising from them have increased substantially over the last few years. This means that Finnish organisations have not been able to obtain access to all scholarly journals.

Ongoing Negotiations

The [FinELib consortium](#) negotiates e-resource license agreements for the Finnish scholarly community including Helsinki University Library. Current agreements that grant access to electronic journals by Taylor & Francis and Wiley expired at the end of 2018.

Negotiations between the FinELib consortium and Taylor & Francis ended with no positive results. The end of the negotiations means that access to Taylor & Francis journals terminated on 1 February 2019.

The researchers will continue to have access to part of the journals according to the post-termination terms in the current agreement even if the publishers will not give access to new subscription-based content.

The 2018 agreement between FinELib and Wiley will be extended until the end of 2019 under current terms and journal contents.

What to do if you don't have access to a scholarly article

- You can search for an article in the following open access services:
 - [Core](#)
 - [BASE](#)
 - [OpenDOAR](#)
 - [ArXiv](#)
 - [Google Scholar](#)
 - [OpenAIRE](#)
- You can install a browser extension or a plug-in to facilitate finding articles which are open access.
 - [Unpaywall](#)
 - [OAButton](#)
 - [Google Scholar Button](#)
 - [Lazy Scholar](#)

web

Title

Q* Advanced search Search Learning Centre collections Article Search

Browse for databases 1 - 100 / 398

- ▶ **Aaltodoc - Aalto-yliopiston julkaisuarkisto**
Database Aalto-yliopiston oppimiskeskus Database interface <https://learningcentre.aalto.fi/tv>
- ▶ **AAT - Art and Architecture Thesaurus**
Database Database interface <http://www.getty.edu/research/> Database guide
- ▶ **ABI(INFORM (ProQuest))**
Database ProQuest Database interface Database guide
- ▶ **Academic Search Elite (EBSCO)**
Database EBSCO Database interface Database guide
- ▶ **ACM - Association for Computing Machinery**
Database Association for Computing Machinery Database interface
- ▶ **ACS Publications**
Database American Chemical Society et al. Database interface
- ▶ **Advanced Technologies Database with Aerospace (Proquest)**
Database Database interface
- ▶ **AES Electronic Library**
Database Database interface
- ▶ **Africa Development Indicators (ADI)**
Database The World Bank Group Database interface <http://www.worldbank.org/>
- ▶ **Ålma - Åbo Akademin kirjaston kirjastotietokanta**
Database Åbo akademis bibliotek Database interface
- ▶ **Ålma Talent lehtiarkisto**
Database Talentum Oyj Database interface Database guide <https://www.almatalent.fi/>
- ▶ **Ålma Talent Pro - Talousfokus**
Database Sanoma Pro Database interface <http://fokus.almatalent.fi/> Database guide
- ▶ **Ålma Talent Pro - Verkkokirjajhyly**
Database Sanoma Pro Database interface <http://verkkokirjajhyly.almatalent.fi/Pages/ProBookShell.aspx>

NARROW SEARCH

Available online

SCIENCE

- ⊕ General 148
- ⊕ Economic Sciences 130
- ⊕ Art and Design 128
- ⊕ Technology and Natural Sciences 115
- ⊕ Related Sciences 82
- ⊕ general 2
- ⊕ Art and Designs 1

AUTHOR

GENRE

E-book Guide contains information about using e-books.

In Location service you can make topic searches and see the location of a book or a journal on the map.

<https://learningcentre.aalto.fi/en/>

