

HPSC0140 Social Research Methods and Data Analysis in STS

Course Syllabus

2021-2022 session | Convenors: Dr Michel Wahome & Dr Melanie Smallman

Course Information

This course introduces students to the theory and practice of research methods in STS and social science more generally, comprising both qualitative and quantitative methods. It will cover research design; qualitative and quantitative methods; research management and ethics; and the epistemology of social research. The course is strongly recommended for any students wanting to undertake empirical social science research for their dissertation, and for students who want to familiarise themselves with how social scientists (particularly within STS) undertake research.

Basic course information

Course website:	See Moodle
Moodle Web site:	HPSC0140
Assessment:	See Moodle
Timetable:	See UCL on-line timetable
Prerequisites:	None
Required texts:	See Moodle
Course tutor(s):	Dr Michel Wahome & Dr Melanie Smallman
Contact:	m.wahome@ucl.ac.uk & m.smallman@ucl.ac.uk
Web:	https://iris.ucl.ac.uk/iris/browse/profile?upi=MWAHO83 https://www.ucl.ac.uk/sts/people/dr-melanie-smallman
Office location:	22 Gordon Square
Office hours:	TBC

Schedule

Week	Date	Topic	Activity / Guest Lecture
1	11/1	Introduction. What is Social Research: (including what is “methodology”?)	<i>Dr Michel Wahome & Dr Melanie Smallman</i>
2	18/1	Decolonizing Methodologies in STS and unpacking a research paper (preparing for your first assignment)	<i>Dr Michel Wahome</i>
3	25/1	Analysis	<i>Dr Michel Wahome</i>
4	1/2	Methods: Surveys and Sampling	<i>Dr Amy Unsworth</i>
5	8/2	Methods: Interviews and Focus Groups	<i>Dr Joe Cain</i>
	15/2	Reading Week	
6	22/2	Methods: Documents and Archives	<i>Dr Noemi Tousignant</i>
7	1/3	Methods: Visual Methods	<i>Dr Jean Baptiste Gouyon</i>
8	8/3	Methods: Case Studies	<i>Dr Carina Fearnley</i>
9	15/3	Methods: Ethnography and Observation	<i>Dr Noemi Tousignant</i>
10	22/3	Research Design	<i>Dr Michel Wahome & Dr Melanie Smallman</i>

Assessments

Summary

	Description	Deadline	Word limit
Research paper review	See below & on Moodle	Monday 7 th February 2022, 9am	1,000 words (40%)
Research Methods Essay	See below & on Moodle	Wednesday 4 April 2022, 9am.	2,000 words (60%)

Assignments

Assessment 1 (40%)

Drawing on the methodological lessons learned to date, take one of the papers below and write a review of the methods used. Things you might want to describe:

- What was the research question?
- What methods were used?
- Were they appropriate? Explain why you think that.
- What other methods could have been used? Explain why they might be better/worse.

Lock, S.J. et al. (2014) “Nuclear energy sounded wonderful 40 years ago”: UK citizen views on CCS’, *Energy Policy*, 66, pp. 428–435. doi:[10.1016/j.enpol.2013.11.024](https://doi.org/10.1016/j.enpol.2013.11.024).

Michel Wahome & M. Graham (2020) Spatially shaped imaginaries of the digital economy, *Information, Communication & Society*, 23:8, 1123-1138, DOI: [10.1080/1369118X.2019.1701696](https://doi.org/10.1080/1369118X.2019.1701696)

Smallman, M. (2020) ‘Nothing to do with the science’: How an elite sociotechnical imaginary cements policy resistance to public perspectives on science and technology through the machinery of government’, *Social Studies of Science*, 50(4), pp. 589–608. doi: 10.1177/0306312719879768.

Unsworth, A. and Voas, D. (2018) 'Attitudes to evolution among Christians, Muslims and the Non-Religious in Britain: Differential effects of religious and educational factors', *Public Understanding of Science*, 27(1), pp. 76–93. doi: 10.1177/0963662517735430.

Assessment 1 Assessment Criteria (please also refer to those given in the Departmental Handbook)

1. Has the student identified the research question?
2. Has the student identified the research methodology?
3. Has the student understood that the choice of research methods is linked to the question being asked?
4. Has the student understood the pros and cons of different social research methods?
5. Is the assessment written in clear English?
6. Is the assessment structured in a logical way?
7. Has the student presented their assessment in a coherent and well-argued way?

Assessment 2 (60%): Essay

You have the opportunity to undergo a summer research internship within UCL's Department of Science and Technology Studies. Write a research proposal for a project you would like to undertake during this internship. The proposal should explain what question you want to investigate, why you want to carry out this research, and outline how you would undertake the project, describing which methods and analytical approaches you will take and why you have selected these (rather than other methods).

Things to think about

- Try to choose a research topic that is relevant to science and technology studies. It might help you to look at the research profiles of staff on the departmental website or to think about other modules you have taken and the kinds of questions that arise in these modules
- Remember that your choice of a research method(s) should be guided by your research question.
- You can choose your methods from the range covered in the course. All work should contain references to methods text books and other literature.
- To structure your proposal you can follow the following format:
 1. Introduction – statement of research question and why it is interesting/needs to be answered
 2. Background – what we already know about the topic of your question

3. Methods – how you will investigate the question (description), why you have chosen this method (critique), what are the shortcomings of the methods (critique), what other methods did you consider and why did you reject them (critique)?
4. Conclusion – summarise your key points and confirm the approach you will take.

Assessment 2 Criteria (In addition to the departmental criteria in the STS Handbook)

- 1 The student follows the instructions
- 2 The student is able to formulate research questions.
- 3 The research proposed in the essay demonstrates a good understanding of the relationship between research question and methodological approach.
- 4 Each choice of research method is convincingly argued.
- 5 The document demonstrates engagement with the relevant literature and class materials.
- 6 The essay is written in a clear and accessible way with good English.

Submitting Assessments:

You **MUST** submit your assessments using the submission points below.

- Check your work is referenced properly. Remember the Turnitin score is not an indication of plagiarism-free work.
- Do not put your name anywhere on the work that you upload - **only use your UCL student number/candidate number.**
- Do not put your name in the filename of any work you upload (we see the filename!).
- Put the essay number or a brief essay title in the filename you upload
- Please submit files as a word document if possible.

In order to be deemed ‘complete’ on this module students must attempt both the assignments.

Aims & objectives

This course introduces students to the theory and practice of research methods in STS and social science more generally, comprising both qualitative and quantitative methods. It will cover research design; qualitative and quantitative methods; research management and ethics; and the epistemology of social research. The course is strongly recommended for any students wanting to undertake empirical social science research for their dissertation, and for students who want to familiarise themselves with how social scientists (particularly within STS) undertake research.

By the end of this course you will:

- Be introduced to a range of qualitative and quantitative social research methods used in STS and understand their strengths and weaknesses.

- Be introduced to underlying epistemological, ontological, ethical and axiological issues underpinning social research
- Know how to formulate research questions.
- Understand the relationship between research questions and methodological approach.
- Have engaged with the relevant academic literature on research methods.

Reading list

We have a weekly reading list for this module, but here are a few key texts you could usefully read all of (& they also appear on the week by week lists below). The Sage Handbook covers pretty much every method you can think of, as well as analytic techniques & theories of knowledge. Decolonizing methodologies presents a comprehensive view of all the aspects of carrying out research, but from a very clear stance about the power of research.

- Norman. K. Denzin & Yvonne. S. Lincoln (Eds.) (2018), *The Sage handbook of qualitative research* (Fifth ed) Sage: London, Thousand Oaks & New Delhi
- Linda Tuhiwai Smith (2012). *Decolonizing methodologies: research and indigenous peoples* (Second Edition ed.). London: Zed Books. Introduction
- Alan Bryman (2016 or 2012), Social Research Methods. Oxford: Oxford University Press.
- Matthew B. Miles, A.M. Huberman and Johnny Saldaña (2020). Qualitative data analysis: a methods sourcebook. 4th Edition. Sage: Los Angeles

Please look at the **UCL Online Reading List** for links to the key readings.

Weekly Overviews

Week 1: Introduction. What is Social Research: including what is “methodology”! (Dr Michel Wahome & Dr Melanie Smallman)

This session provides an overview of the module and associated assignments, what social research methods and methodology are, qualitative and quantitative approaches, primary and secondary data, what strategies are used when doing research, and the different tools available that will be explored further during the module. Using two case studies we will explore how methods can be used to answer research questions.

Recommended Readings:

Bell, J., & Waters, S. (2018). *EBOOK: DOING YOUR RESEARCH PROJECT: A GUIDE FOR FIRST-TIME RESEARCHERS*. McGraw-Hill Education (UK). This is a great general textbook take a read of chapter 1 and 2.

Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners*. Sage. Another great overview book if you prefer this style.

Dawson, C. (2019). *Introduction to Research Methods 5th Edition: A Practical Guide for Anyone Undertaking a Research Project*. Robinson. A very simple and concise intro but will give you all the basics in a clear manner.

Week 2: Decolonizing Methodologies in STS (Dr Michel Wahome)

Decolonization of research leads to greater accuracy, data validity and improvements in research ethics. This is achieved through contextualization and the inclusion of marginal perspectives and approaches. This session will also unpack a research paper to help prepare for the first assignment.

Recommended Readings:

- Sandra Harding (2011). "Introduction Beyond Postcolonial Theory: Two Undertheorized Perspectives on Science and Technology", *The Postcolonial Science and Technology Studies Reader*, Duke University Press. <https://doi.org/10.1215/9780822393849>
- Fan, F. (2016). Modernity, Region, and Technoscience: One Small Cheer for Asia as Method. *Cultural Sociology*, 10(3), 352–368. <https://doi.org/10.1177/1749975516639084>
- David M. Perry, Matthew Gabriele (2021). A New History Changes the Balance of Power Between Ethiopia and Medieval Europe. *Smithsonian Magazine*, (Online) June, 29, 2021. <https://www.smithsonianmag.com/history/new-history-changes-balance-power-between-ethiopia-and-medieval-europe-180978084/>
- Chicago: "NOVA; Papua New Guinea: Anthropology On Trial," 10/03/1983, YouTube: https://www.youtube.com/watch?v=x4hBpxbsI_Q. (Watch at least the first 15 minutes).

Week 3: What is analysis? (Dr Michel Wahome)

Robust analysis is linked to data validity, so empirical validity is central to a discussion of analysis. Often, what constitutes 'analysis' is tacit knowledge that is developed through experience, and reading and reviewing others' research. We shall aim to make explicit what is often learned through experience.

Recommended Readings:

- Bialik, Carl. (2015). As A Major Retraction Shows, We're All Vulnerable To Faked Data. *FiveThirtyEight.com*. (Online). May 20th, 2015. <https://fivethirtyeight.com/features/as-a-major-retraction-shows-were-all-vulnerable-to-faked-data/>
- Becker, Howard (2008). Logic. *Tricks of the Trade: How to think about your research while you're doing it*, University of Chicago Press.
- Matthew B. Miles, A.M. Huberman and Johnny Saldaña (2020). Qualitative data analysis: a methods sourcebook. 4th Edition. Sage: Los Angeles. *Read Chapter 4: Fundamentals of Qualitative Data Analysis and Chapter 11: Drawing and verifying conclusions*. **Note:** the many books already on this reading list have chapters on analysis, so read them too. So, for

example, if you are thinking about case studies, go and read about analysis in Robert Yin's book about case studies, or if you are thinking about visual research, go & read about analysis in Martin Bauer & George Gaskill's book, or if you are thinking about interview research, read Steiner Kvale's book, etc.

Week 4: Methods: Surveys and Sampling (*Guest Lecture from Dr Amy Unsworth*)

This session will provide an introduction to survey-based research, focusing mainly on quantitative surveys. We'll think about values and ethics in survey research and look at practical issues of sampling and designing a good survey instrument (questionnaire).

Recommended Readings:

- Lesley Andres (2012). *Designing & doing survey research*. Sage: London, Thousand Oaks, New Delhi. *Read Chapter 2: Mapping out the survey research process. You can read more if you want to, this book is great because it spell out in detail each step of the survey research process.*
- David Gillborn (2010). The colour of numbers: surveys, statistics and deficit-thinking about race and class. *Journal of Education Policy*, 25(2), 253 - 276.

An example of STS research using a quantitative survey approach:

- Amy Unsworth & David Voas (2018). Attitudes to evolution among Christians, Muslims and the Non-Religious in Britain: Differential effects of religious and educational factors. *Public Understanding of Science*, 27(1), 76-93. *This paper is by our guest lecturer this week!*

Week 5: Methods: Interviews and Focus Groups (*Prof Joe Cain*)

This face-to-face session has three aims: (1) improve skills for interviews as a part of data gathering; (2) introduce processes in preparation, conduct, and processing of interviews; and (3) discuss questions relating to processing interviews as data. Your work in this session involves several steps prior to the session: (a) read Allison (2004); (b) listen to the samples in Activity 1; and (c) think about the questions set for Activity 1. Come to the session ready to discuss your analysis of the samples in Activity 1.

Essential reading (30 min):

Allison, Fred H. (2004). Remembering a Vietnam war firefight: Changing perspectives over time. *The Oral History Review* 31(2): 69-83. *This paper is in UCL Library: [link to paper](#); [link to journal](#); also appears in Perks and Thomson (2015), a [reader](#).*

Essential activity (30 min)

Available on Moodle in Week 5. Listen to three sample interviews. These are excerpts from real exercises in data collection. Think about similarities and contrasts. Think about strengths and weaknesses.

Recommended Readings:

- Robert Perks and Alistair Thomson (eds.) 2015. *The Oral History Reader, 3rd edition* (London: Taylor and Francis). Print ISBN: 9780415707329. eBook ISBN: 9781315671833. Adobe ISBN: 9781317371328. (UCL Library [catalogue](#); UCL students can [download](#)).
- Steiner Kvale. 2008. Doing Interviews. Sage: Thousand Oaks & New Delhi. Read chapter 5: Conducting an interview (pp. 52 – 66) & try to skim Chapter 9 : Analysing interviews, as well as any other bits of this fantastic book that you can.
- Elizabeth Haines. 2010. “Let’s Talk About Science: A Critical Analysis of Oral History Practices in HSTM. Master’s Thesis in London Centre for History of Science, Technology, and Medicine (This programme is the ancestor of our current Master’s programme. Liz did this thesis in STS.)

An example of STS research using interviews:

- Daniel L. Kleinman and Sainath Suryanarayanan. 2012. Dying Bees and the Social Production of Ignorance. *Science, Technology & Human Values*. 38(4): 492-517.

An example of STS research using focus groups:

- Simon J. Lock, Melanie Smallman, Maria Lee & Yvonne Rydin. 2014. “Nuclear energy sounded wonderful 40 years ago”: UK citizen views on CCS. *Energy Policy*, 66, 428–435.

Examples of HPS oral history projects:

- National Life Stories: An Oral History of British Science
<https://www.bl.uk/projects/national-life-stories-oral-history-of-british-science#>
- “Interview with Robert E. Sloan”
profjoecain.net/interview-robert-e-sloan/

Week 6: Methods: Documents and Archives (*Guest Lecture from Dr Noemi Tousignant*)

This week we look at how to use texts as primary research sources. We will talk about how documents, whether published, archived or ‘grey,’ are not merely or passive containers of data to be ‘mined.’ What questions do we need to ask about their function, style, language and structure, and about why, how and by whom they were created, collected, circulated, classified, read and recreated?

Recommended Readings:

- Alan Bryman (2016 or 2012), *Social Research Methods*. Oxford: Oxford University Press. *Read chapters 23 Documents as sources of data and 13 Content Analysis (you can also read: Chapter 22 Language in qualitative research)*
- Creager, Angela NH, Mathias Grote, and Elaine Leong. "Learning by the book: manuals and handbooks in the history of science." *BJHS Themes* 5 (2020): 1-13.
- Yale, Elizabeth. "The Book and the Archive in the History of Science." *Isis* 107, no. 1 (2016): 106-115.

Example of STS research using documents

- Leong, Elaine. "Making medicines in the early modern household." *Bulletin of the History of Medicine* (2008): 145-168. *Written by a UCL colleague!*
- Sedona Chinn, Sol P. Hart, P. S., & Stuart Soroka (2020). Politicization and Polarization in Climate Change News Content, 1985-2017. *Science Communication*, 42(1), 112-129.

Week 7: Methods: Visual Methods (Guest Lecture from Dr Jean Baptiste Gouyon)

The lecture will cover fundamental aspects of working with images and other visual representations as primary sources for your research. The main aspect of the lecture is to look at images as communication devices. We look at different methods to analyse visual artefacts, semiotics, intertextuality and frames.

Recommended Readings:

- Rose, Gillian. *Visual methodologies: An introduction to researching with visual materials* (4th edition). Sage, 2016. Chapter 1 & 2 (pp.1-47)
- Bauer, Martin. W. & Gaskell, George. *Qualitative researching with text, image and sound*. London: SAGE Publications Ltd. *Read Chapter 6 (pp. 94-107), then skim Chapter 13 (pp. 228-245) & Chapter 14 (pp. 247-262).* [NB: the 2nd two chapters on this list focus on analysis, so worth a skim now then come back to them in week 9 if you're interested in this kind of research!]

An example of STS research using visual methods:

- Jean-Baptiste Gouyon, (2014). Making science at home: visual displays of space science and nuclear physics at the Science Museum and on television in postwar Britain. *History and Technology*, 30(1-2), 37-60. *This paper is by our guest lecturer for this week!*

Week 8: Methods: Case Studies (Dr Carina Fearnley)

Using a case study is a powerful approach to generate an in-depth, multi-faceted understanding of a complex issue in its real-life context. It is an established research design that is used extensively in a wide variety of disciplines, particularly in the social sciences. By developing an intensive, systematic investigation of a single individual, group, community, or other unit the researcher can examine in-depth data relating to several variables. In this session we explore what case studies are, how they are conducted and how to pick relevant methods to make the case study robust, along with discussion of the analysis process. Examples will include multi-sited research, and interdisciplinary research case studies.

Recommended Readings:

- Robert Yin (2018). Case study research and applications: Design and methods. Sage: Thousand Oaks, London and New Delhi. *Read Chapter 1: Getting started: how to know*

whether and how to use the case study as a research method, Chapter 4: Collecting Case Study evidence

- Thomas Schwandt and Emily F. Gates (2018). Case study methodology. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (Fifth ed., pp. 341-553). London and Thousand Oaks: Sage.
- Malcolm Tight (2017) Understanding Case Study Research: Small-scale Research with Meaning (First Ed., pp.224)

An example of STS research using a case study approach:

- Carina Llosa (2019). Socio-environmental conflicts as social cohesion thermometers: a case study. *Tapuya: Latin American Science, Technology and Society*, 2(1), 237-252.

Week 9: Methods Ethnography and Observation (*Guest Lecture with Dr Noemi Tousignant*)

Ethnography is the signature method of cultural anthropology; it is also used by sociologists, geographers, and other social researchers. This week is about how to observe, record, and describe social action/interaction as a research method. We will cover key terms such as culture, participant observation, fieldnotes, thick description, multi-sited ethnography and digital ethnography.

Recommended Readings:

- Gobo, G. (2008). *Doing ethnography*. SAGE Publications Ltd. *Read Chapter 1: What is ethnography?, pp.2-14 and Chapter 10: What to Observe: Social Structures, Talks and Contexts, pp. 162-189.*
- Annette N. Markham (2018). Ethnography in the digital internet era: from fields to flows, descriptions to interventions. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (Fifth ed., pp. 650-688). London and Thousand Oaks: Sage.

Further Readings on the Method of Ethnography:

- Emerson, R. M. Fretz, R. I. and L. L. Shaw (2011), *Writing Ethnographic Fieldnotes. Second Edition*. University of Chicago Press. *Chapter 1: Fieldnotes in Ethnographic Research, pp. 1-20. This chapter goes into greater depth on how to observe and take notes.*
- Geertz, C. (1973), Thick Description: Towards an Interpretive Theory of Culture <https://philpapers.org/archive/GEETTD.pdf> *This is a classic articles in the history of ethnographic methods; it describes how anthropologists understand culture in relation to ways of describing practices in context.*

Examples of Ethnography in STS:

- Ethnographies of Science: Interview with the Authors: <https://journal.culanth.org/index.php/ca/ethnographies-of-science-interview> *A group interview with ethnographers of science as they reflect on their methods.*

- Rosemary McKechnie (1996). Insiders and outsiders: identifying experts on home ground. In A. Irwin & B. Wynne (Eds.), *Misunderstanding Science? The public reconstruction of science and technology* (pp. 126-151). Cambridge: Cambridge University Press. *This is a superb example of STS use of ethnography.*
- Bruno Latour & Steve Woolgar (1986). Laboratory life: The construction of scientific facts. Princeton University Press. *Read Chapter 2: An anthropologist visits the laboratory. This is an STS classic! A pioneering work that explores how ethnography in a lab changes how we understand science as culture and practice.*

Week 10: Research Design (Fearnley and Wahome)

In this lecture we bring together all the materials covered in the module to date to explore how you can best design research for a particular project. This includes: 1) establishing the research questions - developing critical awareness of how to phrase a research question, 2) the research process - matching topics with methods, and finally 3) reviewing methods - developing an understanding of the power and limitations of methods.

Recommended Readings:

- Bell, J., & Waters, S. (2018). *EBOOK: DOING YOUR RESEARCH PROJECT: A GUIDE FOR FIRST-TIME RESEARCHERS*. McGraw-Hill Education (UK). This is a great general textbook take a read of chapter 14 and 15.
- Matthew B. Miles, A.M. Huberman and Johnny Saldaña (2020). Qualitative data analysis: a methods sourcebook. 4th Edition. Sage: Los Angeles. *Read Chapter 2: Research Design & Data Management.*

See individual sessions on Moodle for further reading.

Course expectations

Students are required to attend at least 70% of classes and to participate in discussions.

Important policy information

Details of college and departmental policies relating to modules and assessments can be found in the STS Student Handbook www.ucl.ac.uk/sts/handbook

All students taking modules in the STS department are expected to read these policies.