

William E. M. Lowe

Work

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Home

Not for the web version

Employment

HERTIE SCHOOL OF GOVERNANCE 2.2020–
Senior Research Scientist

PRINCETON UNIVERSITY 8.2015–1.2020
Senior Research Specialist, Department of Politics

- Research on the causal inference of racial bias in policing (with Mummolo, Knox), comparative legislative sentiment analysis (with Proksch, Wäckerle, Soroka), and preference estimation from central bank meeting transcripts (with Baerg)
- Development and maintenance of data infrastructure, including the US Voter File
- Statistical and research design consulting
- Computational tools workshops (R, GIS, text analysis, parallelization, web scraping) as part of the Graduate Methods Program

Lecturer, Department of Politics 9.2018–1.2019

Lecturer, Woodrow Wilson School of Public and International Affairs 9.2015–5.2017

UNIVERSITY OF MANNHEIM 4.2011–7.2015
Senior Researcher, Mannheim Centre for European Social Research

- Eurodata ‘Pillar’: Text data and analysis (E-14 with tenure).
- Research into and new methods for statistical text analysis, and political engagement and mobilization via social media (with van Deth and Theocharis)
- Taught TBCI ‘Theory Building and Causal Inference’, one of four Graduate School core courses

Principal Investigator Project C4, Sonderforschungsbereich 884

- Research on estimating policy preferences of politicians, parties, and bankers using votes, surveys, experiments, and text data. (with Baerg, Proksch, Gschwend)

MAASTRICHT UNIVERSITY 9.2009–4.2011
Assistant Professor of Research Methods

- Basic research in statistical text analysis
- Designed and co-deliver the first year of the Research Masters in European Studies (with Aneta Spenderovha)

UNIVERSITY OF NOTTINGHAM 6.2006–8.2009
Research Fellow, Methods and Data Institute

- Collaboration with the Human Rights Law Centre and International Criminal Court (with Bekou and Hunter)
- Short courses in advanced statistics to regional UK social science faculty and postgraduates (with van der Eijk)

HARVARD UNIVERSITY

Researcher, Weatherhead Center for International Affairs

3.2005–9.2005

- Development of multilingual content analysis methods for the study of political identity (with Johnston and Herrera) as part of the Identity Project

TRINITY COLLEGE DUBLIN

Research Fellow, Department of Political Science

2.2004–2.2005

- Further development of Wordscores, a statistical method for extracting policy positions from text (with Benoit and Laver).

WORDMAP LTD.

Technical Architect

8.2003–4.2006

- Management of **Parmenides** (IST-2001-39023), a 3.25m euro Fifth Framework Project on ontology-driven text mining and temporal data analysis
- Hired and managed development team
- Developed text classification and taxonomy software
- Consulting to clients from the pharmaceutical industry and government.

HARVARD UNIVERSITY

Postdoctoral Fellow, Weatherhead Center for International Affairs

7.2002–6.2003

- Research on political aspects of group identity using computer-assisted text analysis (with Johnston, Herrera, Abdelal and McDermott)
- Development of open source multilingual content analysis software

Postdoctoral Fellow, Center for Basic Research in the Social Sciences (now IQSS)

7.2000–6.2002

- Research on evaluating automated international events data systems (with King)

TUFTS UNIVERSITY

Research Associate, Center for Cognitive Studies

11.1999–6.2000

- Research on evolution of altruism, group selection, and Bayesian inference (with Dennett)

Education

UNIVERSITY OF EDINBURGH

Ph.D in Cognitive Science, School of Informatics

9.1996–7.2001

Thesis: 'Topographic Maps of Semantic Space'

- Developed a model of human semantic memory combining neural networks and word embeddings (at the time: 'semantic space')
- Demonstrated that word embedding measures predict many psycholinguistic priming effects

MSc in Cognitive Science, Center for Cognitive Science

9.1995–7.1996

Thesis: 'A Network Model of the Organization of the Lexicon' (awarded with distinction)

- Terry Myers Prize for Interdisciplinarity

UNIVERSITY OF WARWICK / UNIVERSITY OF WISCONSIN

BA in Philosophy

9.1992–7.1995

- Specializations: Logic, Philosophy of Science, Mind and Language
- Exchange student at the University of Wisconsin at Madison

ARTICLES

Knox, D., Lowe, W., and Mummolo J. (forthcoming) Administrative records mask racially biased policing. *American Political Science Review*.

Baerg, N., & Lowe, W. (2018). A textual Taylor rule: Estimating central bank preferences combining topic and scaling methods. *Political Science Research and Methods*, 1–17. <https://doi.org/10.1017/psrm.2018.31>

Proksch, S.-O., Lowe, W., Wäckerle, J., & Soroka, S. (2018). Multilingual sentiment analysis: A new approach to measuring conflict in legislative speeches. *Legislative Studies Quarterly*. <https://doi.org/10.1111/lsq.12218>

Theocharis, Y., & Lowe, W. (2016). Does Facebook increase political participation? Evidence from a field experiment. *Information, Communication & Society*, 19(10), 1465–1486. <https://doi.org/10.1080/1369118X.2015.1119871>

Meyer-Sahling, J.-H., Lowe, W., & van Stolk, C. (2015). Silent professionalization: EU integration and the professional socialization of public officials in Central and Eastern Europe. *European Union Politics*, 17(1), 162–183. <https://doi.org/10.1177/1465116515608270>

Theocharis, Y., Lowe, W., van Deth, J. W., & García-Albacete, G. (2015). Using Twitter to mobilize protest action: Online mobilization patterns and action repertoires in the Occupy Wall Street, Indignados, and Aganaktismenoi movements. *Information, Communication & Society*, 18(2), 202–220. <https://doi.org/10.1080/1369118X.2014.948035>

Lowe, W., & Benoit, K. R. (2013). Validating estimates of latent traits from textual data using human judgment as a benchmark. *Political Analysis*, 21(3), 298–313. <https://doi.org/10.1093/pan/mpt002>

Carey, S. C., Mitchell, N. J., & Lowe, W. (2013). States, the security sector, and the monopoly on violence: A new database on pro-government militias. *Journal of Peace Research*, 50(2), 249–258. <https://doi.org/10.1177/0022343312464881>

Benoit, K. R., Laver, M., Lowe, W., & Mikhaylov, S. (2012). How to scale coded text units without bias: A response to Gemenis. *Electoral Studies*, 31(3), 605–608. <https://doi.org/10.1016/j.electstud.2012.05.004>

Lowe, W., Benoit, K. R., Mikhaylov, S., & Laver, M. (2011). Scaling policy preferences from coded political texts. *Legislative Studies Quarterly*, 36(1), 123–155. <https://doi.org/10.1111/j.1939-9162.2010.00006.x>

Sullivan, J., & Lowe, W. (2010). Chen Shui-Bian: On independence. *China Quarterly*, 203, 619–638. <https://doi.org/10.1017/S0305741010000627>

Lowe, W. (2008). Understanding Wordscores. *Political Analysis*, 16(4), 356–371. <https://doi.org/10.1093/pan/mpn004>

Jenne, E. J., Saideman, S. M., & Lowe, W. (2007). Separatism as a bargaining posture: The role of leverage in minority radicalization. *Journal of Peace Research*, 44(5), 539–558

Lowe, W. (2004a). Sentence completion test. In *The SAGE Encyclopedia of Social Science Research Methods* (pp. 1024–1025). Sage

King, G., & Lowe, W. (2003). An automated information extraction tool for international conflict data with performance as good as human coders: A rare events evaluation design. *International Organization*, 57(3), 617–642. <https://doi.org/10.1017/S0020818303573064>

Bryson, J. J., & Lowe, W. (1997). **Comment on Ballard et al.'s Deictic codes for the embodiment of cognition.** *Behavioral and Brain Sciences*, 20(4), 743–744

BOOKS AND CHAPTERS

Bullinaria, J. A., & Lowe, W. (Eds.). (2002). *Connectionist models of cognition and perception*. World Scientific

Bekou, O., Lowe, W., & Birkett, D. (2016, April 25). Fostering cooperation through technology-driven tools. In O. Bekou & D. Birkett (Eds.), *Cooperation and the International Criminal Court* (pp. 396–416). Brill

Meyer-Sahling, J.-H., Lowe, W., & van Stolk, C. (2012). Towards NPMization of the post-communist state? In *Executive Politics in Times of Crisis* (pp. 99–117). Basingstoke, Palmgrave Macmillan

Lowe, W. (2010). Identifying your accompanist. In Y. Wilks (Ed.), *Close engagements with artificial companions: Key social, psychological, ethical and design issues* (pp. 95–100). Benjamins

Lowe, W. (2006). New methods for conflict data. In *Programming for peace: Computer-aided methods for international conflict resolution and prevention* (pp. 321–334). Springer

Lowe, W. (2003). The statistics of text: New methods for content analysis, In *Social Sciences*. Midwest Political Science Association Annual Meeting, Chicago

Lowe, W. (2005). Rare events research. In *Encyclopedia of Social Measurement*. Elsevier

Lowe, W. (2004b). Uncertainty. In *The SAGE Encyclopedia of Social Science Research Methods*. Sage

Bryson, J. J., Lowe, W., & Stein, L. A. (2001). Hypothesis testing for complex agents (A. M. Meystel & E. R. Messina, Eds.). In A. M. Meystel & E. R. Messina (Eds.), *NIST Workshop on Performance Metrics for Intelligent Systems, Special Publication 970*, NIST

PEER-REVIEWED CONFERENCE PAPERS

Baerg N., Lowe, W., Ponzetto S., Stuckenschmidt H., and Zirn, C. (2014) Estimating central bank preferences Winning entry to the *NLP Unshared Task in PoliInformatics*, June 2014.

Lowe W., Bekou O. Hunter, E. (2008) Markup and metadata in international criminal law. Proceedings of the 4th e-Social Science Conference, Manchester.

Dowdall, J., Lowe, W., Ellman, J., Rinaldi, F. and Hess, M. (2004). The role of multiword terminology in knowledge management, in *Proceedings of the Fourth International Conference on Language Resources and Evaluation*.

Lowe, W. and King, G. (2003). Some statistical methods for evaluating information extraction systems, in K. Pastra, editor, *Proceedings of the Tenth Annual Meeting of the European Association for Computational Linguistics Society* pp.19-26.

Lowe, W. (2001). Towards a theory of semantic space, in *Proceedings of the Twenty-Third Annual Conference of the Cognitive Science Society*, Moore, J. D. and Stenning, K., editors, pp.576–581, Mahwah NJ. Lawrence Erlbaum Associates.

Lowe, W. (2000). What is the dimensionality of human semantic space?, in *Connectionist Models of Learning, Development, and Evolution*, French, R. M. and Sougné J. P., editors, Springer, pp.303–311.

Lowe, W. and McDonald, S. (2000). The direct route: Mediated priming in semantic space, in *Proceedings of the Twenty-Second Annual Conference of the Cognitive Science Society*, Gleitman, L. R. and Joshi, J. K., editors, pp.806–811, Mahwah NJ. Lawrence Erlbaum Associates.

McDonald, S. and Lowe, W. (1998). Functional priming and the associative boost, in *Proceedings of the Twentieth Annual Conference of the Cognitive Science Society*, Gernsbacher, M. A. and Derry, S. J., editors, pp.675–680, Mahwah NJ. Lawrence Erlbaum Associates.

Lowe, W. (1997). Semantic representation and priming in a self-organizing lexicon, in *Connectionist Representations*, Bullinaria, J. A., Houghton, G., and Glasspool, D. W., editors, pp.227–239, London. Springer.

Lowe, W. (1997). Meaning and the mental lexicon, in *Proceedings of the Fifteenth International Joint Conference on Artificial Intelligence*, pp.1092–1097. Morgan Kaufmann.

MEDIA

Scaling analyses featured in ‘[What happened to America’s political center of gravity?](#)’ *New York Times*, June 26, 2019.

OTHER

Lowe, W. (2002). Software for content analysis: Technical Report for the Weatherhead Center for International Affairs Identity Project.

Shillcock, R., Hipwell, P., McDonald, S. and Lowe W. (1998). Distinctiveness of spoken word context predicts visual lexical decision time *Centre for Cognitive Science Research Paper EUCCS-1998-4*, University of Edinburgh.

MANUSCRIPTS

Baerg N., Duell, D. and Lowe, W. (MS) Central Bank communication as public opinion: Experimental evidence.

Lowe, W. (MS) [Scaling things we can count](#). (Formerly “There’s basically only one way to do it”)

Lowe W. (MS) [Putting it all on the line: Measurement models for event data](#)

Lowe, W. (MS) Rare events designs without a sense of proportion.

Awards

David A. Lake best paper award at International Political Economy Society (IPES) meeting 2018.

Winning paper: NLP Unshared Task in PoliInformatics, Association of Computational Linguistics meeting (ACL) 2014.

Talks

Selected invited talks:

ÅBO AKADEMI UNIVERSITY, DEPARTMENT OF LAW Learning about bias from administrative data	9.2019
UNIVERSITY OF VIENNA, DEPARTMENT OF COMMUNICATION Open questions in text scaling	12.2018
UNIVERSIDAD DE LOS ANDES, DEPARTMENT OF PSYCHOLOGY Putting it all on the line	10.2018

PEW RESEARCH Putting it all on the line	5.2018
CORNELL UNIVERSITY, GOVERNMENT DEPARTMENT Some unifying theory for text scaling	10.2017
CENTRAL EUROPEAN UNIVERSITY, DEPARTMENT OF GOVERNMENT Scaling things we can count	10.2018
EMORY UNIVERSITY <i>Atlanta Computational Social Science Workshop</i> But what shall we do with the humans? (Keynote)	12.2015
UNIVERSITY OF KONSTANZ, POLITICS AND PUBLIC ADMINISTRATION Ideal point estimation from words, topics, and events	7.2015
UNIVERSITY OF ZURICH Scaling things we can count.	7.2015
HEBREW UNIVERSITY OF JERUSALEM <i>Analyzing Political Discourse in the International Arena conference</i> Counts, categories, and coders: Tools for analysing and visualising documents, speeches, and international events (keynote)	3.2015
MCGILL UNIVERSITY & UNIVERSITÉ DE LAVAL Data, from the web	2.2015
PRINCETON UNIVERSITY, DEPARTMENT OF POLITICS There's really only one model to scale count data: Should we trust it?	1.2015
WISSENSCHAFTSZENTRUM BERLIN FÜR SOZIALFORSCHUNG <i>MARPOR conference</i> What's right – and what's wrong – with saliency theory	5.2014
MCGILL UNIVERSITY Counts, categories, and coders: Learning about conflict and protest from manual and machine-coded media data	4.2014
UNIVERSITY OF MANNHEIM, SFB 884 <i>New Developments in Party Manifesto Research</i> Everything you ever wanted to know about text scaling (but were afraid to ask)	10.2012
OXFORD UNIVERSITY <i>ESRC Research Methods Festival</i> Extracting position information from legislative speech	7.2012
UNIVERSITY OF MAINZ, COMMUNICATIONS DEPARTMENT Computer-assisted content analysis	7.2012
BILKENT UNIVERSITY & TURKISH INTERIOR MINISTRY <i>Event Data Workshop</i> Measurement models for event data	12.2011
UNIVERSITY OF OXFORD, DEPARTMENT OF ANTHROPOLOGY Scaling and structure	10.2009
NATIONAL SCIENCE FOUNDATION Text analysis in law	10.2009
CENTRAL EUROPEAN UNIVERSITY Computer-aided content analysis (Public lecture)	11.2004

Teaching

PRINCETON UNIVERSITY

Visualizing data (POL 245)

2015–2019

- Introduction to statistics and data analysis covering causal and predictive inference, text, spatial, and network analysis
- Largest themed course in the Freshman Scholars Institute, Princeton's program for preparing incoming first generation / low income students for undergraduate study

Advanced Statistical Programming

2015–2018

- R: parallel computing with (and without) a cluster, using C++ to speed up code, GIS, text analysis, package development
- Python: Introduction to python, text data analysis with Spacy, and web scraping

Methods Lab (wvs 403 /404)

2016–2018

- Undergraduate research design and statistics preparing students for Junior Papers and Senior Theses.

Introduction to Quantitative Social Science (POL 345)

2019–2020

- Undergraduate research design and statistics course preparing undergraduate students for Junior Papers and Senior Theses (with Marc Ratkovic)

UNIVERSITY OF MANNHEIM

Theory Building and Causal Inference

2011–2014

- Core Graduate School course on explanation and theory construction
- Topics: Philosophy of social science, theory and practice of causal inference, including directed acyclic graphs and potential outcomes

UNIVERSITY OF COLOGNE

Research Design

2014

- Introduction to research design focusing on measurement strategies and causal inference

Bayesian and Multilevel Models

2014

- An introduction to Bayesian models and multilevel models using MCMC

MAASTRICHT UNIVERSITY

Research Masters and PhD Courses

2010–2011

- Quantitative Data Analysis
- Research Design
- Formal Analysis

Undergraduate Courses

2010–2011

- Quantitative Methods 1
- Quantitative Methods 2
- Qualitative Methods
- Discourse Analysis
- Conceptual Analysis
- Academic Research and Writing

UNIVERSITY OF NOTTINGHAM

The Methods and Data Institute offered two day workshops comprising 10-15 hours of instruction. Each course attracted between 10-40 students, researchers, and faculty. I designed those marked with an asterisk and co-taught all of them.

Workshops

2006–2009

- Inference*
- Regression*
- Impact* (causal inference)
- Measurement and Scaling
- Text Analysis*
- Missing Data*
- Time Series Analysis

SHORT COURSES

Computer Assisted Content Analysis

Quantitative political text analysis, beginning from basic text description, through content analysis and modern methods from computational linguistics, to the state of the art in topic models, classification, and scaling.

Versions of this course have been given at:

Syracuse University ‘Institute for Qualitative and Multi-method Research’	2010–present
Texas A&M University ‘Winter Institute in Methods’	2015
University of Mannheim ‘Empirical Implications of Theoretical Models’	2011
University of Ljubljana ‘ECPR Summer School on Methods and Techniques’	2008–2011

Python for Event Data Analysis

A two day course teaching Python to beginners, culminating in using the Pandas library to work with event data

GIGA Hamburg	2013
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Tools for Middle-Sized Data Projects

One day course covering computational tools for organizing political science coding projects. Enough about Python, Django, relational databases, web servers and web pages to set up a complete data project site with coder interface, public-facing pages, and dynamically updated downloadable datasets.

American Political Science Association annual conference ‘short course’	2009
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Grants

As (co-)principal investigator or equivalent:

SFB 884: Measuring a common space and the dynamics of reform positions €463,200
from the Deutsche Forschungsgemeinschaft, with Thomas Gschwend, James Lo, and Heiner Stuckenschmidt

Parmenides: Ontology-driven temporal text mining €3,251,490
European Commission, replacing Jeremy Ellman as co-PI

As named researcher or contractor:

<i>Culture in Power Transitions: Sino-American conflict in the 21st century</i>	\$1,489,115
US Department of Defense Minerva Grant, with Robert Jervis, Erin Jenne, and Gregory Mitrovich	
<i>Enhancing the Rome Statute system of justice supporting national ownership of criminal justice procedures through technology driven services</i>	€204,155
European Commission, with Olympia Bekou	
<i>Accountability and government militias</i>	£180,741
UK Economic and Social Research Council, with Sabine Carey and Neil Mitchell	
<i>International Criminal Court project</i>	£18,500
Various governments, with Olympia Bekou	
<i>Yoshikoder development</i>	\$15,000
Harvard University & Princeton Institute for Advanced Study	
<i>ICC and the State conference</i>	£2,500
University of Nottingham.	

Professional

Memberships

European Political Science Association, American Political Science Association

Reviewing

Project reviewer for UK Economic and Social Research Council, Nuffield Foundation (Q-Step), US National Science Foundation

Affiliations

- Fellow at the International Criminal Justice Unit of the Human Rights Law Centre, University of Nottingham
- Member of the International Criminal Court (ICC) Legal Tools Project
- Associate Member of SFB-884, University of Mannheim

Service

INTERNATIONAL CONFERENCES

Eighth Annual Conference on New Directions in Analyzing Text as Data (Text as Data) 2017
at Princeton University, with Brandon Stewart

Computational linguistics and political science: What have you done for me lately? 2014
at University of Mannheim, with Nicole Baerg

The ICC and the State 2007
at University of Nottingham, with Olympia Bekou and Emilie Hunter

CONSULTING

At Princeton, Mannheim, and Nottingham, I provided consulting on research methods, statistical computing, and infrastructure. I built and maintained research databases on topics including of

foreign influence attempts, social media and protest, content analysis, judicial databases, and coalition government

I answer statistics and research design questions on <http://stats.stackexchange.com> and am ranked in the top 1% of respondents

Technical

Expert (typically 10+ years experience)

R, Java, Python, L^AT_EX, (R)Markdown

Intermediate

Django, SQL, BUGS, JAGS, Stan, Unix shell

Beginner

Amazon AWS, Javascript, HTML, CSS

GitHub: <https://github.com/conjugateprior>

Software

R PACKAGES

On CRAN as author or contributor

twfy Access UK parliamentary information events Store and manipulate event data

quanteda Manage and analyze textual data

ffmetadata Access metadata for Princeton's Fragile Families project

On GitHub

austin Estimate ideal points from text

cbn Replicate and extend Caliskan, et al. 2017

Resha Stems Turkish faster but more gently than Snowball

qss.student and **pol345.student** Access selected problem sets from Imai 2017

iqmr IQMR computer-assisted content analysis course materials

JAVA APPLICATIONS

Yoshikoder Open-source multilingual content analysis software

JFreq Multilingual word frequency counter

YKConverter Converting documents to encoded plain text

Reencoder A document (re)encoding tool

WEB APPLICATIONS

Cooperation and Judicial Assistance Database Legislative database of how states deal with the International Criminal Court

Data

10 MILLION INTERNATIONAL EVENTS: 1991-2004

Available from <http://hdl.handle.net/1902.1/FYXLAWZRIA>

NATIONAL IMPLEMENTATIONS OF THE ROME STATUTE

A limited version is available at the International Criminal Court's **Legal Tools** website. The database was used by Ireland's delegation in negotiations at the ICC's 2010 Review Conference.

I also developed and private project-specific datasets on pro-government armed groups, judges and judgements in the UK constitutional court, Solana and EU diplomacy, Taiwanese presidential speeches, migrants and regional newspapers on the Russia-China border.

Students

UNIVERSITY OF NOTTINGHAM

PhD students co-supervised

Jon Sullivan 'Negativity and information in campaign advertising'

Jessica Andersson 'Party competition over welfare policies in Sweden'

Annika Jones 'War crimes and corporate responsibility'

MAASTRICHT UNIVERSITY

At Maastricht I supervised four M.A. students and nineteen B.A. students

I was on the PhD committee of Elissaveta Radulova, and of Tom Louwerse (at Leiden University)

Commercial

From 8/2003 I was Technical Architect at Wordmap Ltd. reporting to the CEO.

After completing the company's role in the EU 5th Framework project **Parmenides**.

I designed and developed software for multiple projects including a metadata management and text classification system for UK local government.

During this period I was responsible for hiring and managing the company's development team. I also liaised with the sales department presented the company's work to funders, clients, and to the UK government at national and local levels.

References

Available on request