

Benjamin W. Arold

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Primary Fields: Labor Economics, Public Economics, AI & Economics
Research Focus: Economics of Education, Economics of Religion, Political Economy
Research Methods: RCTs, Econometrics, Machine Learning, Computational Linguistics

CURRENT POSITION

Fall 2022 – Post-Doctoral Researcher Center for Law and Economics, ETH Zürich

EDUCATION

2017 – 2022	Ph.D. Economics	LMU Munich & ifo Institute
2015 – 2016	M.Sc. Environmental Economics and Climate Change	London School of Economics
2014 – 2015	M.Sc. Economics	University College London
2010 – 2013	B.Sc. Economics	LMU Munich

RESEARCH VISITS

March 2024 (scheduled)	Host: W. Bentley MacLeod	Princeton University
Sep 2019 – April 2020	Hosts: Paul E. Peterson, Martin West	Harvard University

JOB MARKET PAPER

Evolution vs. Creationism in the Classroom: The Lasting Effects of Science Education.

[Download Job Market Paper](#)

Revise and Resubmit, Quarterly Journal of Economics

Anti-scientific attitudes can impose substantial costs on societies. Can schools be an important agent in mitigating the propagation of such attitudes? This paper investigates the effect of the content of science education on anti-scientific attitudes, knowledge, and choices. The analysis exploits staggered reforms reducing or expanding the coverage of evolution theory in US state science education standards. I compare adjacent cohorts in models with state and cohort fixed effects. There are three main results. First, expanded evolution coverage increases students' knowledge about evolution. Second, the reforms translate into evolution approval in adulthood, but do not crowd out religiosity or affect political attitudes. Third, the reforms affect high-stakes life decisions, namely the probability to work in life sciences.

WORKING PAPERS

Can Schools Change Religious Attitudes? Evidence from German State Reforms of Compulsory Religious Education (with Ludger Woessmann, LMU Munich, and Larissa Zierow, Reutlingen University), [Download Working Paper](#)

Revise and Resubmit, Journal of Human Resources

We study whether compulsory religious education in schools affects students' religiosity as adults. We exploit the staggered termination of compulsory religious education across German states in models with state and cohort fixed effects. Using three different datasets, we find that abolishing compulsory religious education significantly reduced religiosity of affected students in adulthood. It also reduced the religious actions of personal prayer, church-going, and church membership. Beyond religious attitudes, the reform led to more equalized gender roles, fewer marriages and children, and higher labor-market participation and earnings. The reform did not affect ethical and political values or non-religious school outcomes

Genetic Endowments, Educational Outcomes and the Mediating Influence of School Quality (with Paul Hufe, Bristol University, and Marc Stoeckli, LMU Munich), [Download Working Paper](#)

Revise and Resubmit, Journal of Political Economy Microeconomics

Genetic endowments are fixed at conception and matter for the educational attainment of individuals. Do better schools mitigate or magnify the outcomes of this genetic lottery? We analyze the interplay of genetic endowments and school quality for educational attainment in the United States. Our results suggest that higher-quality schools are substitutes for genetic endowments: a 1 SD increase in school quality reduces the positive association of educational attainment with a 1 SD increase in the relevant polygenic index from 0.36 to 0.30 years—a decrease of 17 disadvantaged students complete high school and college, but not post-graduate degrees. These increases are underpinned by relative gains in language ability, patience, risk aversion, and health.

Measuring Student Mindsets at Scale in Resource-constrained Settings: SMS Toolkit with an Application to Brazil during the Pandemic (with Guilherme Lichand, Elliott Ash, Jairo Gudino, Carlos Doria, Ana Trindade, Eric Bettinger, and David Yeager), [Download Working Paper](#)

Accumulating evidence that a growth mindset – the belief that intelligence is not fixed and can be developed – is associated with better educational outcomes has spurred research on the topic, from how to measure student beliefs more accurately to how to promote challenge-seeking behavior in the classroom. Most of this research is, however, concentrated in high-income countries, as measuring and intervening on student mindsets typically relies on connected devices, which are often unavailable in low- and middle-income countries' schools. This paper develops a toolkit to measure student mindsets in resource-constrained settings. Concretely, we adapt the computer-based survey instruments to text messages in the context of Brazilian secondary public schools. Collecting mindset survey data from 3,570 students in São Paulo State as schools gradually reopened in early 2021, we validate our methodology by matching key patterns in our data to previous findings in the literature. We also train a machine learning model on our data and show that it can (1) accurately classify students' SMS responses, (2) accurately classify student mindsets even based on text written in other media, and (3) rate the fidelity of different interventions to the growth mindset concept.

The Language of Contract: Legal Amenities in Collective Bargaining Agreements (with Elliott Ash, ETH Zurich, W. Bentley MacLeod, Princeton University, and Suresh Naidu, Columbia University) [Download Working Paper](#).

This paper introduces tools for measuring the legal content of collective bargaining agreements (CBAs), which are increasingly available in large digital archives and beginning to be used by labor economists. We parse legal obligations (e.g. “the employer shall provide...”) and entitlements (e.g. “workers shall receive...”) using text-as-data algorithms applied to the contract text. We apply the method to 30,000 CBAs from Canada, 1986-2015, and show that these contracts give legal entitlements mostly to workers, while imposing legal obligations equally on employers and workers. We then show that worker legal entitlements can be interpreted as amenities, in particular by showing that companies providing more entitlements also score highly on a survey indicating pro-worker management practices. Further, these legal amenities go beyond the usual pecuniary benefits such as pensions, for example by giving workers more workplace autonomy. In an empirical analysis motivated by efficient collective bargaining over wages and CBA text, we find that worker entitlements increase with local labor income tax rates, while union wage premia decrease. Also consistent with the model, both wage premia and entitlements increase with local sectoral employment rates.

The Unintended Consequences of School Curricula Reforms: Examining Spillover Effects of US Education Standards (with M.Danish Shakeel, University of Buckingham), [Download Working Paper](#)

School curricula have lasting impacts on students. In theory, reforming school curricula can be a powerful tool for policy-makers, but may also be harmful. To empirically prove the latter, we analyse the adoption of the Common Core State Standards (CCSS) for math and English in the US. We estimate spillovers of the CCSS on student achievement in non-targeted subjects such as science and social studies in models with state and year fixed effects. Using individual-level student achievement data from NAEP, we show that the CCSS had a negative effect on student achievement in non-targeted subjects. This effect is largest for young underprivileged students. To uncover mechanisms, we use teacher surveys to show that the CCSS reduced the instructional focus on non-targeted subjects. Our results call for a careful evaluation of potential spillovers on non-targeted outcomes when designing targeted education reforms.

WORK IN PROGRESS

Does the timing of income payments matter for households? Experimental Evidence from random within-month variation of child allowance payments (with Larissa Zierow, Reutlingen University, Sebastian Wichert, ifo Munich, Emanuel Renkl, TU Munich).

The Opportunities and Challenges of ML-based Targeting for Educational Technologies: Evidence from

Brazil in the Aftermath of the Pandemic (with Guilherme Lichand, Elliott Ash, Jairo Gudino, Mario Curiki, Carlos Doria, David Yeager and Eric Bettinger).

Experimental Evidence on the Effect of Newspaper Framing on the Public Support of the Climate Policies.

Religious Language in Political Speech (with Elliott Ash, ETH Zurich, and Gloria Gennaro, University College London).

POLICY CONTRIBUTIONS (SELECTED)

The teaching of evolution theory shapes students' beliefs and choices, *VoxEU Column* 10/2022.

The Costs of Canceling Darwin: Fewer scientists, more skepticism of science in states that limit evolution instruction, *Education Next* 04/2022.

Religious education in school affects students' lives in the long run (with Ludger Woessmann, LMU Munich and Larissa Zierow, Reutlingen University), *VoxEU Column* 03/2022.

How Are Lower-Income Families Faring in the Coronavirus Crisis? (with Vera Freundl, Katia Werkmeister, both ifo, and Larissa Zierow, Reutlingen University), *ifo Schnelldienst* 74 (6), 2021.

MEDIA (SELECTED)

GlobeNewswire (04/2022), VoxTalks Economics (Podcast) (03/2022), Spiegel (01/2022), FAZ (01/2022), BR (01/2022), The Education Exchange (Podcast) (11/2021), Forbes (08/2021), Tagesschau.de (06/2021), Neue Osnabrücker Zeitung (06/2021)

HONORS AND GRANTS

2023	Fürther Ludwig-Erhard-Prize 2023
2023	Prize for Best Dissertation in 2021/2022, German Economic Association, Section on Economics of Education
2022	Participant at the 7th Lindau Nobel Meeting on Economic Sciences
2022	Summa cum laude for dissertation "School curricula, educational trajectories, and labor market outcomes"
2019-20	DAAD one-year scholarship for stay at Harvard University
2016	LSE Best Overall Performance Prize in MSc Environmental Economics and Climate Change
2016	LSE Client Earth Best Dissertation Prize in MSc Environmental Economics and Climate Change
2015	LSE Graduate Support Scheme for funding of Master studies
2010-16	German National Academic Foundation (Studienstiftung des deutschen Volkes)
2010	Prize for best Abitur performance of high school (1.0)

SERVICE TO THE PROFESSION

Journal Referee:	<i>Quarterly Journal of Economics, European Economic Review, Labour Economics, CESifo Economic Studies, German Economic Review</i>
Conference Co-Organization or Scientific Committee:	<i>ETH AI Policy Summit, Royal Economic Society Junior Symposium, Spring Meeting of Young Economists</i>
Diversity Engagement:	<i>President of Munich LGBTQ group of German National Academic Foundation (2021/2022)</i>

PRESENTATIONS

2023	Jacobs Center Research Seminar (Switzerland), ETH-UZH AI and Economics Workshop (Switzerland), VfS (German Economic Association) (Germany); ASREC Conference, London (UK); Guest Lecture in course on the Political Economy of Religion, Harvard University (US), Political Economy/History Tea, Harvard University (US), Economics of Education Meeting of the German Economic Association (Switzerland); Zurich Political Economy seminar series (Switzerland); RES and SES, Glasgow (UK)
2022	ASSA/AEA Annual Meeting (online); ASREC Conference, Chapman University (US); UZH Political Economy seminar (Switzerland); ifo-WZB EffEE conference (Germany); Lindau Nobel Laureate Meeting (Germany), 9th International Meeting in Law and Economics (France), ASREC Conference (UK)
2021	AEFP (US, virtual), LMU Empirical PhD Workshop (Germany, virtual); Applied Micro Seminar at Harvard University (US, virtual); AERA (US, virtual); RES (UK, virtual), SOLE (US, virtual); ESPE (Spain, virtual); SMYE (Italy, virtual); LMU Empirical PhD Workshop (Germany, virtual); EALE (Italy); VfS (German Economic Association) (Germany, virtual)
2020	Colloquium at Program on Education Policy and Governance at Harvard University (US), AEFP (US, virtual); ifo Lunchtime Seminar (Germany, virtual); EALE/SOLE/AASLE (Germany); APSA (US, virtual); VfS (German Economic Association) (Germany, virtual); ifo/WZB EffEE PhD Workshop (Germany, virtual); LMU Empirical PhD Workshop (Germany, virtual)
2019	Seminar in Religion and Political Economy at Harvard University (US); Graduate Political Economy Workshop at Harvard University (US); IWAAE (Italy); SMYE (Belgium); ESPE (UK); CEPR Conference on The Economics of Religion in Venice (Italy); Munich Young Economist Meeting (Germany)
2018	IRES Graduate Student Workshop at Chapman University (US); IWAAE (Italy); Evidence-Based Economics Summer Meeting in Munich (Germany); European Doctoral Group in Economics Jamboree (Germany)

TEACHING

2024 (sched.)	Workshop <i>NLP and Computational Linguistics in Economics</i>	Guest Lecturer, Princeton University
2023	Graduate Course <i>Text Data in Business and Economics</i>	Lecturer, Basel University
2022	Graduate Course <i>Econometric Evaluation of Education Policies</i>	Teaching Assistant, LMU
2019-20	Graduate Course <i>The Political Economy of the School</i>	Guest Teaching Fellow, Harvard
2018-19	Undergraduate Tutorial <i>Economics of Education</i>	Teaching Assistant, LMU
2013	Undergraduate Tutorial <i>Advanced Econometrics and Stata</i>	Teaching Assistant, LMU
2012-13	Undergraduate Tutorial <i>Microeconomics</i>	Teaching Assistant, LMU
2017-23	Supervision of Master, Bachelor, and Seminar Theses in Economics and ML/NLP	Supervisor, ETH and LMU

TECHNICAL SKILLS

Python, R, Stata, and \LaTeX ,

LANGUAGES

REFERENCES

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