Research statement & short bio

I study how to boost human judgment and decision making (scienceofboosting.org) by understanding human and machine behavior and how humans themselves understand machines. I combine insights and methods from cognitive science, collective intelligence ("wisdom of crowds"), heuristics, and algorithms. I also work on applications in digital environments (sks.to/rao), medical decision making, and meteorology. Furthermore, I am co-leading an initiative on reconfiguring behavioral science for crisis knowledge management in response to COVID-19 and other, future disruptive events (scibeh.org).

I am the head of the research area “boosting decision making” (scienceofboosting.org) and senior researcher at the Center for Adaptive Rationality at the Max Planck Institute for Human Development in Berlin. In 2010 I received the Hillel Einhorn New Investigator Award of the Society for Judgment and Decision Making. My research has been covered in the popular press (e.g., Scientific American) and appears in academic and popular science books (incl. Tetlock and Garner’s “Superforecasting”). I studied psychology, management, and computer science, and received my psychology doctorate in 2009 from the University of Basel.

Five selected recent, peer-reviewed publications

* equal contribution / shared authorship | * senior authorship


Ten selected all-time, peer-reviewed publications


Academic Qualifications

Dr. phil. (summa cum laude/with highest praise), dissertation: „The power of fluency and aggregation: Two case studies in the cognitive science of human judgment“, Department of Psychology, University of Basel, 2005–2009

Master of Science in Psychology (summa cum laude/with highest praise); major in social psychology, consumer and organizational behavior, Department of Psychology, University of Basel, Switzerland, 2003–2005

Subsidiary degree in managerial economics, studies in computer sciences, Wirtschaftswissenschaftliches Zentrum (WWZ), University of Basel, Switzerland, 2001–2005
Bachelor of Science in Psychology (*magna cum laude*/with great praise), Department of Psychology, University of Basel, Switzerland, 2000–2003

Managerial economics and computer sciences, Wirtschaftswissenschaftliches Zentrum (WWZ), University of Basel, Switzerland, 1999–2000

**Positions**

Senior Research Scientist and Head of Research Area “Boosting Decision Making”, Center for Adaptive Rationality (ARC), Max Planck Institute for Human Development, Berlin, 2021–…

Researcher, Center for Adaptive Rationality (ARC), Max Planck Institute for Human Development, Berlin, 2012–2021; since 2019: Head of Research Area “Boosting Decision Making”

Researcher, Cognitive and Decision Sciences, Department of Psychology, University of Basel, 2009–2012

Graduate student, Cognitive and Decision Sciences, Department of Psychology, University of Basel, Switzerland, 2005–2009

**Grants**


HORIZON+UKRI grant (HORIZON-CL4-2021-DIGITAL-EMERGING-01-10, GA 101070588). *Hybrid human artificial collective intelligence in open-ended decision making (HACID)*. National Research Council of Italy (Trianni, V., Nuzzolese, A. G.), Max Planck Institute for Human Development (Herzog, S. M., Kurvers, R. H. J. M.), Nesta | UK innovation agency for social good (Berditchevskaia, A., Baek, P.), Met Office UK (Fung, F., Lowe, J.,) Human Dx EU, Ltd. (Barabucci, G. & Lin, I.); 2.8 Mio €; 2022-2025.


Volkswagen Foundation (VolkswagenStiftung). *Reclaiming individual autonomy and democratic discourse online: How to rebalance human and algorithmic decision making*. Max Planck Institute for Human Development (Hertwig, R., Herzog, S. M.), University of Bristol (Lewandowsky, S., Rashid, A.), Northeastern University (Eliassi-Rad, T.); €1,440,000; 2021-2025. http://portal.volkswagenstiftung.de/search/projectDetails.do?siteLanguage=en&ref=98515


Selected awards & honors

Fellow of the Psychonomic Society (FPsyS) (2018)

Hillel Einhorn New Investigator Award 2010 for the paper Herzog & Hertwig (2009), Society for Judgment and Decision Making; see http://www.sjdm.org/history.html

Steven Karger Department of Psychology Award 2009 for dissertation ("The power of fluency and aggregation: Two case studies in the cognitive science of human judgment", Herzog, 2008), CHF 5,000, Department of Psychology, University of Basel.

Preprints

* equal contribution / shared authorship  |  $ senior authorship


Peer-reviewed publications

* equal contribution / shared authorship  |  $ senior authorship


Other publications

* equal contribution / shared authorship | *senior authorship


beyond nudging]. In C. Bala, M. Buddensiek, P. Maier, & W. Schuldzinski (Eds.), Verbraucherbildung: Ein weiter Weg zum mündigen Verbraucher [Consumer education: A long way to the mature consumer] (pp. 19-40). Verbraucherzentrale. https://doi.org/10.15501/978-3-86336-924-8_2


Organized workshops, symposia and conferences


SciBeh 2021 Virtual Workshop on “Science communication as collective intelligence” (co-organizer), November 18th-19th 2020, https://www.scibeh.org/events/workshop2021

Workshop “How to create a boost? Using behavioral sciences to help people make better decisions by themselves” held at Summer Institute on Bounded Rationality 2021: Rethinking Behavioral Economics, June 11th–23rd 2021, Max-Planck-Institute for Human Development, Berlin, Germany.

SciBeh 2020 Virtual Workshop on “Building an online information environment for policy relevant science” (co-organizer), November 9th-10th 2020, https://www.scibeh.org/events/workshop2020


Workshop “Fitting vs. predicting” held at Summer Institute on Bounded Rationality 2017: Predictions under uncertainty, June 6th–14th 2017, Max-Planck-Institute for Human Development, Berlin, Germany.

Workshop *How well can you predict what you don’t yet know?* held at 2016 JDMx Meeting for early career researcher, June 8th–11th 2016, University of Basel, Basel, Switzerland.

Workshop *Prediction contest: How well can you predict what you don’t yet know?* held at Summer Institute on Bounded Rationality 2015: Homo Heuristicus in the Economy, June 4th–11th 2015, Max-Planck-Institute for Human Development, Berlin, Germany.


Workshop *Data analysis beyond p-values: A practical introduction to Bayesian statistics.* International Max Planck Research School LIFE, June 3rd 2014, Max-Planck-Institute for Human Development, Berlin, Germany.

Workshop *Psychologists are open to change and should adopt Bayesian statistics* (with Mirjam Jenny). 6th JDM Workshop for Young Researchers, July 17th–19th 2013, Max-Planck-Institute for Human Development, Berlin, Germany.

Workshop *Data analysis beyond p-values.* Summer Institute on Bounded Rationality: Decision making in a social world, June 17th–25th 2013, Max-Planck-Institute for Human Development, Berlin, Germany.


Co-organizer 3rd Workshop for Judgment and Decision making, University of Basel, Switzerland (September 2010).


Workshop robust statistics. 2nd Workshop for Judgment and Decision making, University of Mannheim, Germany (July 2009).


Co-organizer European Social Cognition Network Transfer of Knowledge Conference 2005, Vitznau, Switzerland.


**Teaching, supervision, and mentoring**

Training in teaching skills for higher education

Certificates in higher education [Zertifikate Hochschuldidaktik] at the University of Basel (20.11.2011; 2010-2011; total of 66 hours):

- *Introduction to higher education didactics* [Einführungsmodul Hochschuldidaktik] (2010)
- *How to grade* [Fair prüfen] (2011)
- *Running meetings and discussions* [Diskussionsleitung in der Lehre] (2010)
- *Problem-based learning* [Problembasiertes Lernen] (2010)
Graduate and undergraduate courses/lectures taught

The psychology and cognitive science of artificial intelligence
(master seminar; winter semester 2021/22 at Department of Psychology, Humboldt University of Berlin)

Improving judgment and decision making
(master seminar: 2014 at Department of Psychology, University of Basel, Switzerland)

Psychology of forecasting

Applied forecasting
(applied master seminar: 2010, 2011, 2012 at Department of Psychology, University of Basel, Switzerland)

Introduction to psychology, economics and neuroscience
(master seminar: 2005, 2006, 2007, 2008 at Department of Psychology, University of Basel, Switzerland)

Negotiation
(applied master seminar: 2008 at Department of Psychology, University of Basel, Switzerland)

Drawing inferences from memory
(with Lael Schooler; master seminar: 2006 at Department of Psychology, University of Basel, Switzerland)

Decision analysis and decision technology
(master seminar: 2006 at Department of Psychology, University of Basel, Switzerland)

Evolutionary psychology: Emotion, motivation and evolution
(bachelor lecture: 2011, 2012 at Department of Psychology, University of Basel, Switzerland)

Managerial decision making
(bachelor seminar: 2007 at Department of Psychology, University of Basel, Switzerland)

How to write a bachelor thesis
(bachelor seminar: 2010, 2011 at Department of Psychology, University of Basel, Switzerland)

Supervision/mentoring history

Postdocs: Philipp Lorenz-Spren, Ying Li

Ph.D. students: Michael Geers, Aleksandra Litvinova, Ezequiel López López, Nathaniel Phillips

Master theses: Alice Atanasiu, Basil Blum, Andrea Hajmer, Greta Kellermann, Isa de Maddelena, Pietro Nickl, Zsofia Oroszlan, Yuliya Romanyuk, Ruxandra Teodoreanu, Marlene Wulf

Master course theses/essays: Gerlinde Amschl, Anais Arnoux, Raffaella Arcuri-Tortola, Carola Binder, Lorena Boss, Monica Caprio, Florence Ettlin, Dominic Fischer, Chantal Grüter, Kirsten Hardt, Christina Jans, Sarah Kupper, Andrea Rid, Yuliya Romanyuk, Sabrina Stefanelli, Elena Stolz, Milena Ulrich, Stephanie Zell

Bachelor theses: Béla Ackermann, David Allemann, Alice-Alexandra Atanasiu, Cécile Bucher, Emina Canic, Kim Casagrande, Romain Cottens, Loris Criscione, Sibylle Fluri, Madlen Hoffstadt, Marietta Jäggi, Carmen Kaiser, Miriam Kaufmann, Lea Kilchling, Nadia Kohler, Selina Langenegger, Claudia Lombris, Samir Meier, Eric Neumann, Yuliya Romanyuk, Oliver Schürmann, Alice Seiler, Ariane Senn, Tom Siebenaler, Petra Vonmoos, Sylvia Walukiewicz

Internships/lab rotations: Stephan Bedenk, Eleanor Brewer, Johanna Forbriger, Michael Geers, Christine Heni, Madlen Hoffstadt, Moritz Ketzer, Pietro Nickl, Marlene Wulf, Alexander zur Bonsen

Research assistants: 20+ (not listed individually)
Professional services

Reviewing papers

Behavior Research Methods
Cognitive Psychology
Cognitive Research: Principles and Implications
Cognitive Science
Computational Brain & Behavior
Decision
Diagnosis
Decision Analysis
European Journal of Social Psychology
Experimental Psychology
IEEE Transactions on Human-Machine Systems
JAMA Network Open
Journal of Applied Research in Memory and Cognition
Journal of Behavioral Decision Making
Journal of Business, Economics and Finance
Journal of Experimental Psychology: General
Journal of Experimental Psychology: Human Perception & Performance
Journal of Experimental Psychology: Learning, Memory, and Cognition
Journal of Mathematical Psychology
Journal of Personality and Social Psychology
Judgment and Decision Making
Management Science
Medical Decision Making
Memory & Cognition
Minds and Machines
Nature Human Behavior
Organizational Behavior and Human Decision Processes
Personality and Social Psychology Review
PLOS ONE
Proceedings of the National Academy of Sciences of the United States of America (PNAS)
Psychological Science
Psychonomic Bulletin & Review
Scientific Reports
Social Cognition
Synthese
Topics in Cognitive Science
Trends in Cognitive Sciences

Reviewing grant applications

German Science Foundation (Deutsche Forschungsgemeinschaft, DFG)
German-Israeli Foundation for Scientific Research and Development (GIF)
ETH Zürich Research Commission
Israel Science Foundation (ISF)
National Science Foundation (NSF)
United States-Israel Binational Science Foundation (BSF)

Reviewing conference submissions

COGSCI annual meeting of the Cognitive Science Society
SJDM annual conference (Society for Judgment and Decision Making)
Diagnostic Error in Medicine conference (Society to Improve Diagnosis in Medicine)

*SPLUDM conference* (subjective probability, utility, and decision making conference; European Association for Decision Making, EADM)

Consulting and training activities

Berlin University Alliance
International Society for Human Rights (Switzerland)
Swisstransplant (Swiss National Foundation for Organ Donation and Transplantation)
Robert Koch Institute (Berlin)
swiss re
VolkswagenStiftung

Committee member

Graduate student and post-doc representative, Department of Psychology, University of Basel, Switzerland, 2007–2012
Student representative, Department of Psychology, University of Basel, Switzerland, 2000–2003.

Professional member

- Psychonomic Society (FPsyS), Fellow (named by Governing Board in Spring 2018)
- European Association for Decision Making (EADM)
- German Psychological Society (Deutsche Gesellschaft für Psychologie, DGPs)
  (Fachgruppen: Allgemeine Psychologie; Arbeits-, Organisations- und Wirtschaftspsychologie; Medienpsychologie; Methoden und Evaluation)
- International Behavioural Public Policy Association
- Society for Judgment and Decision Making (SJDM)

Continuing education

Statistical training after PhD

- Data Science specialization, Johns Hopkins University on Coursera
  - Reproducible Research. Certificate earned on August 2nd, 2015
  - Exploratory Data Analysis. Certificate earned on February 2nd, 2015
  - Getting and Cleaning Data. Certificate earned on December 28th, 2014
  - R Programming. Certificate earned on November 4th, 2014
  - The Data Scientist’s Toolbox. Certificate earned on November 4th, 2014
- Bayesian modeling for cognitive science: A WinBUGS workshop, 2011, University of Amsterdam, Netherlands.

Presentation skills

- Presenting at international scientific conferences. 3 day course (30h/1 ECTS) by TRESS&TRESS

Invited talks


Herzog, S. M. (2014). Signal detection in the wild: How to quantify implied cost-benefit tradeoffs of decision makers who are unable or reluctant to reveal them. Invited talk, research colloquium at the Department of Psychology, University of Tübingen, Tübingen, Germany.


Herzog, S. M. (2010). The "wisdom of crowds" in one mind: Dialectical bootstrapping and the benefits of combining different cognitive processes. Invited talk, Colloquium Behavioral Studies (851-0586-01L), ETH Zürich, Zürich, Switzerland.


Recent talks and posters

Last 5 years; only talks and posters as presenter are listed; no institute- or group-internal talks are listed


