Research statement

I research how to improve human judgment and decision making by understanding human and machine behavior. To this end I combine insights from cognitive science, bounded rationality, heuristics, collective intelligence ("wisdom of crowds"), data science, and machine learning—with a focus on how to create the "wisdom of crowds" within one mind (i.e., "inner crowd" and "dialectical bootstrapping"). In addition to basic research, I work on applications in medical diagnostics, medical decision making, and meteorology.

Five selected, recent publications


Grants

Education

Ph. D., 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

Academic experience and positions

Researcher, Center for Adaptive Rationality (ARC), Max Planck Institute for Human Development, Berlin, 2012–

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

Guest researcher, Fuqua School of Business, Duke University, US, 06/2009

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

Research assistant, Social and Economic Psychology, Department of Psychology, University of Basel, Switzerland, 2001–2005

Research internship, Prof. Dr. Klaus Fiedler, Institute of Psychology, Department of Social Psychology, University of Heidelberg, Heidelberg, Germany, summer 2003

Statistics tutor, Department of Psychology, University of Basel, Switzerland, 2001–2002

Awards

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.


1st place in The Technion Prediction Tournament
Condition E-sampling: Erev et al., 2008 (http://tx.technion.ac.il/~erev/Comp/Comp.html)
Publications

*equal contribution / shared first authorships


Organized workshops, symposia and conferences


**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 Prediction contest: How well can you predict what you don’t yet know?** held at Summer Institute on Bounded Rationality 2016: Better decisions in a complex world, June 27th–July 5th 2016, 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 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.


Continuing education

Statistical training

- 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 (www.tress-tress.com)

Teaching, supervision, and mentoring

Training in teaching skills for higher education

Certificate in higher education [Sammelzertifikat Hochschuldidaktik] at the University of Basel (20.11.2011; 2010-2011; total of 66 hours):
- Introduction to higher education didactics [Einführungsmodule Hochschuldidaktik] (2010)
- How to grade [Fair prüfen] (2011)
- Running meetings and discussions [Diskussionsleitung in der Lehre] (2010)
- Problem-based learning [Problemorientiertes Lernen] (2010)
- Rhetoric [Rhetorische Kommunikation] (2010)

Graduate and undergraduate courses taught

Department of Psychology, University of Basel, Switzerland
Improving judgment and decision making (master level theory seminar: 2014)
Negotiation (master level applied seminar: 2008)
Drawing inferences from memory (with Lael Schooler; master level theory seminar: 2006)
Decision analysis and decision technology (master level theory seminar: 2006)
Managerial decision making (bachelor level seminar: 2007)
How to write a bachelor thesis (bachelor level seminar: 2010, 2011)

Supervision/mentoring

Ph.D. students: Aleksandra Litvinova, Nathaniel Phillips

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

Master course theses: Gerlinde Arnschl, Anaïs 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 Cottsens, Loris Criscione, Sibylle Fluri, Marietta Jäggi, Carmen Kaiser, Miriam Kaufmann, Lea Kichling, Nadia Kohler, Selina Langenegger, Claudia Lombris, Samir Meier, Yuliya Romanyuk, Oliver Schürmann, Alice Seiler, Ariane Senn, Tom Siebenaler, Petra Vonmoos, Sylvia Walukiewicz

Internships: Stephan Bedenk, Eleanor Brewer, Alexander zur Bonsen
Professional services

Reviewing papers

- Behavior Research Methods
- Cognitive Psychology
- Computational Brain & Behavior
- Decision Analysis
- European Journal of Social Psychology
- Experimental Psychology
- IEEE Transactions on Human-Machine Systems
- Journal of Applied Research in Memory and Cognition
- Journal of Behavioral Decision Making
- 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
- Personality and Social Psychology Review
- PLOS ONE
- Psychological Science
- Psychonomic Bulletin & Review
- Social Cognition
- Topics in Cognitive Science

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

Consulting and training activities

- International Society for Human Rights (Switzerland) & Swisstransplant
- 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
Society for Judgment and Decision Making (SJDM)
European Association for Decision Making (EADM)
Fellow of the Psychonomic Society (FPsyS)

Conference talks and posters
only talks and posters as presenter are listed


Herzog, S. M. (2014). *Signal detection theory in the wild: Reverse-engineering error preferences of decision makers who are unable or reluctant to reveal them*. Paper presented at the 35th Annual Meeting of the Society for Judgment and Decision Making, Long Beach, California, USA.


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, presented at the research colloquium at the Department of Psychology, University of Tübingen, Tübingen, Germany.


Herzog, S. M. (2012). *How to make people underestimate Fukushima: Mismatched rates bias the perception of risk and natural rates eliminate this bias*. Poster presented at the 33rd Annual Meeting of the Society for Judgment and Decision Making, Minneapolis, Minnesota, USA.


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 (851-0585-01L), ETH Zürich, Zürich, Switzerland.


