

Dr. Stefan Herzog

Senior Research Scientist and
 Head of Research Area “Boosting Decision Making” at
 Center for Adaptive Rationality (ARC)
 Max Planck Institute for Human Development
 Lentzeallee 94, 14195 Berlin, Germany

herzog@mpib-berlin.mpg.de
stefanherzog.org
[GoogleScholar](#)
[Bluesky](#)
[LinkedIn](#)
[Open Science Framework \(OSF\)](#)
[ORCID](#)

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Research statement & short bio

I study how to boost human judgment and decision making (scienceofboosting.org) by investigating human and machine behavior—drawing on psychology, cognitive science, AI, collective intelligence, and computational social science. I head the research area “Boosting Decision Making”, am a senior research scientist, and serve as one of the director’s deputies at the Center for Adaptive Rationality, Max Planck Institute for Human Development in Berlin. I actively engage in science communication, policy advising, and applied problem solving. My current research areas are:

1. Hybrid human–AI decision making and collective intelligence
2. Risks and benefits of digitalization, AI, & new media:
 Systems and behavioral interventions for resilient citizens, organizations, & societies
3. Boosting: Improving human judgment and decision making in individuals and teams

My work addresses key challenges facing individuals, organizations, and societies: building better and more trustworthy hybrid human–AI teams, ensuring AI supports (rather than erodes) human competences, and strengthening resilience against misinformation, manipulation, and risks of generative AI. I currently lead or co-lead four ongoing third-party funded projects:

1. “Hybrid human artificial collective intelligence in open-ended decision making” (HACID) for medical diagnostics and climate services (EU Horizon grant, co-PI; <http://www.hacid-project.eu>)
2. “Assisting behavioral science and evidence-based policy making using online machine tools” (POLTOOLS; DFG grant, PI; scibeh.org/poltools)
3. “Reclaiming individual autonomy and democratic discourse online: How to rebalance human and algorithmic decision making” (Reclaiming autonomy online/RAO; Volkswagen Foundation grant, co-PI; sks.to/rao)
4. “Social media for democracy – understanding the causal mechanisms of digital citizenship” (SoMe4Dem; EU Horizon grant, co-PI; some4dem.eu).

I am committed to interdisciplinary research, open and reproducible science, research-led teaching, and building inclusive, equitable research environments. I have published in top international peer-reviewed journals (e.g., Annual Review of Psychology, Nature Human Behaviour, Perspectives in Psychological Science, PNAS, Psychological Science, Science Advances, and Trends in Cognitive Sciences) and have been featured in Science, Scientific American, and cited in academic and popular books, including Superforecasting by Tetlock and Gardner. I received the Hillel Einhorn New Investigator Award of the Society for Judgment and Decision Making in 2010.

I studied psychology (social, economic, and decision psychology), management (organizational science and marketing), and computer science, and received my PhD in psychology from the University of Basel in 2009.

Five selected recent, peer-reviewed publications

* equal contribution / shared authorship | \$ senior author

Herzog, S. M., & Hertwig, R. (2025). Boosting: Empowering citizens with behavioral science. *Annual Review of Psychology*, 76, 851–881. <https://doi.org/10.1146/annurev-psych-020924-124753>

Zöller, N., Berger, J., Lin, I., Fu, N., Komarneni, J., Barabucci, G., Laskowski, K., Shia, V., Harack, B., Chu, E. A., Trianni, V., Kurvers*\$, R. H. J. M., & **Herzog**\$, S. M.** (2025). Human-AI collectives most accurately diagnose clinical vignettes. *Proceedings of the National Academy of Sciences of the United States of America*, 122(24) e2426153122. <https://doi.org/10.1073/pnas.2426153122>

Herzog, S. M., & Franklin, M. (2024). Boosting human competences with interpretable and explainable artificial intelligence. *Decision*, 11(4), 493–510. <https://doi.org/10.1037/dec0000250> | postprint: <https://hdl.handle.net/21.11116/0000-000F-FEE4-2>

Geers, M., Fischer, H., Lewandowsky, S., & **Herzog\$**, S. M. (2024). The political (a)symmetry of metacognitive insight into detecting misinformation. *Journal of Experimental Psychology: General*, 153(8), 1961–1972. <https://doi.org/10.1037/xge0001600>

Kozyreva, A., Lorenz-Spreen, P., **Herzog**, S. M., Ecker, U. K. H., Lewandowsky, S., Hertwig, R., ... Wineburg, S. (2024). Toolbox of individual-level interventions against online misinformation. *Nature Human Behaviour*, 8, 1044–1052. <https://doi.org/10.1038/s41562-024-01881-0> | non-paywalled access: <https://rdcu.be/dH6AE>

Ten selected all-time, peer-reviewed publications

* equal contribution / shared authorship | \$ senior author

Herzog, S. M., & Hertwig, R. (2025). Boosting: Empowering citizens with behavioral science. *Annual Review of Psychology*, 76, 851–881. <https://doi.org/10.1146/annurev-psych-020924-124753>

Zöller, N., Berger, J., Lin, I., Fu, N., Komarneni, J., Barabucci, G., Laskowski, K., Shia, V., Harack, B., Chu, E. A., Trianni, V., Kurvers*\$, R. H. J. M., & **Herzog**\$, S. M.** (2025). Human-AI collectives most accurately diagnose clinical vignettes. *Proceedings of the National Academy of Sciences of the United States of America*, 122(24) e2426153122. <https://doi.org/10.1073/pnas.2426153122>

Herzog, S. M., & Franklin, M. (2024). Boosting human competences with interpretable and explainable artificial intelligence. *Decision*, 11(4), 493–510. <https://doi.org/10.1037/dec0000250> | postprint: <https://hdl.handle.net/21.11116/0000-000F-FEE4-2>

Geers, M., Fischer, H., Lewandowsky, S., & **Herzog\$**, S. M. (2024). The political (a)symmetry of metacognitive insight into detecting misinformation. *Journal of Experimental Psychology: General*, 153(8), 1961–1972. <https://doi.org/10.1037/xge0001600>

Hertwig*, R., **Herzog***, S. M., Kozyreva, A. (2023). Blinding to circumvent human biases: Deliberate ignorance in humans, institutions, and machines. *Perspectives in Psychological Science*, 19(5), 849–859. <https://doi.org/10.1177/17456916231188052>

Kurvers, R. H. J. M., Nuzzolese, A. G., Russo, A., Barabucci, G., **Herzog**, S. M., & Trianni, V. (2023). Automating hybrid collective intelligence in open-ended medical diagnostics. *Proceedings of the National Academy of Sciences*, 120(34), e2221473120. <https://doi.org/10.1073/pnas.2221473120>

Kozyreva, A., **Herzog**, S. M., Lewandowsky, S., Hertwig, R., Lorenz-Spreen, P., Leiser, M., & Reifler, J. (2023). Resolving content moderation dilemmas between free speech and harmful misinformation. *Proceedings of the National Academy of Sciences of the United States of America*, 120(7), e2210666120. <https://doi.org/10.1073/pnas.2210666120>

Analytis*, P. P., Barkoczi*, D., & **Herzog**\$, S. M.** (2018). Social learning strategies for matters of taste. *Nature Human Behaviour*, 2, 415–424. <https://doi.org/10.1038/s41562-018-0343-2>

Herzog, S. M., & Hertwig, R. (2014). Harnessing the wisdom of the inner crowd. *Trends in Cognitive Sciences*, 18, 504–506. <https://doi.org/10.1016/j.tics.2014.06.009>

Herzog, S. M., & Hertwig, R. (2009). The wisdom of many in one mind: Improving individual judgments with dialectical bootstrapping. *Psychological Science*, 20, 231–237. <https://doi.org/10.1111/j.1467-9280.2009.02271.x>

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, economic, and decision psychology, Department of Psychology, University of Basel, Switzerland, 2003–2005

Subsidiary degree in managerial economics (focus: organizational science & marketing), 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 grant (HORIZON-CL2-2022-DEMOCRACY-01-07, GA 101094752). *Social media for democracy – understanding the causal mechanisms of digital citizenship (SoMe4Dem)*. Max Planck Institute for Mathematics in the Sciences (Olbrich, E.), Max Planck Institute for Human Development (Kozyreva, A., Lorenz-Spreen, P.,

Herzog, S. M., Hertwig, R.), Ca' Foscari University of Venice (Cruciani, C., Warglien, M., Santagiustina, C. R. M. A.), University of Leipzig (Karolewski, I. R., Lorenz, A., Zech, N.), University of Amsterdam (Rogers, R., Peeters, S.), Free University of Brussels (Meyer, T., Willaert, T., Picone, I.), Karlsruhe Institute of Technology (Banisch, S.), Fondation Nationale des Sciences Politiques (Cointet, J.-P., Morales, L., Ramaciotti Morales, P.), University of Bristol (Lewandowsky, S.); 3.0 Mio €; 2023-2026. <https://some4dem.eu/> | <https://cordis.europa.eu/project/id/101094752>

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 €; 2022-2026. <http://www.hacid-project.eu/> | <https://cordis.europa.eu/project/id/101070588>

German Research Foundation (Deutsche Forschungsgemeinschaft, DFG). *Assisting behavioral science and evidence-based policy making using online machine tools (POLTOOLS)*. Herzog, S. M.: €381,750; 2021-2026. <https://www.scibeh.org/poltools/> | <https://gepris.dfg.de/gepris/projekt/458366841?language=en>

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. <https://sks.to/rao> | <http://portal.volksagenstiftung.de/search/projectDetails.do?siteLanguage=en&ref=98515>

Volkswagen Foundation (VolkswagenStiftung). *Controlling the Jekyll and Hyde of artificial-intelligence assisted information architectures: Accepting customization while resisting micro-targeted manipulation*. Max Planck Institute for Human Development (Hertwig, R., Herzog, S. M.), University of Bristol (Lewandowsky, S., Rashid, A.), Northeastern University (Eliassi-Rad, T.); €148,000; 2019–2020. <https://sks.to/rao> | <https://portal.volksagenstiftung.de/search/projectDetails.do?siteLanguage=en&ref=95932>

Swiss National Foundation (SNF). *Dialectical bootstrapping: A new paradigm to improve individual judgment*. Herzog, S. M. & Hertwig, R.; CHF 270,925; 2011–2017. <http://p3.snf.ch/Project-129572>

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 author

Berger, J., Burton, J. W., Hertwig, R., Kosch, T., Kurvers, R. H. J. M., Kurzenberger, B., Lazik, C., Onnasch, L., Rieger, T., Thoma, A. I., Wulff, D. U., & Herzog\$, S. M. (2025). *Fostering human learning is crucial for boosting human-AI synergy*. <https://doi.org/10.48550/arXiv.2512.13253>

Berger, J., Moussaïd, M., Hertwig, R., Herzog, S. M., & Kurvers, R. (2025, August 28). *Making the wisdom of crowds efficient — with confidence*. https://doi.org/10.31234/osf.io/j9t6p_v2

Lorenz-Spreen, P., Arslan, R. C., Kozyreva, A., Swire-Thompson, B., Geers, M., Herzog, S. M., & Hertwig, R. (2024, July 2). *Real-time assessment of motives for sharing and creating content among highly active Twitter users*. <https://doi.org/10.31234/osf.io/jf8w9>

Fazio, L., Rand, D. G., Lewandowsky, S., Susmann, M., Berinsky, A. J., Guess, A. M., Kendeou, P., Lyons, B., Miller, J., Newman, E., Pennycook, G., Swire-Thompson, B., & **Building a Better Toolkit Team** (2024, June 23). *Combating misinformation: A megastudy of nine interventions designed to reduce the sharing of and belief in false and misleading headlines*. <https://doi.org/10.31234/osf.io/uyjhq>

Ottaviani, M., Herzog, S. M., Nickl, P. L., & Lorenz-Spreen, P. (2024, May 2). *How A/B testing changes the dynamics of information spreading on a social network*. <https://arxiv.org/abs/2405.01165>

Analytis, P. P., Kaushik, K., Herzog, S. M., Bahrami, B., & Deroy, O. (2024, March 25). *A recommender network perspective on the informational value of critics and crowds*. <https://arxiv.org/abs/2403.18868>

Burton, J. W., **Herzog**, S. M., & Lorenz-Spreen, P. (2024, February 8). *Simple changes to content curation algorithms affect the beliefs people form in a collaborative filtering experiment*. <https://doi.org/10.31234/osf.io/5yfbt>

Fischer, H., **Herzog**, S. M., Rebitschek, F. G., Ketzer, M., & Fleischhut, N. (2022, December 14). *Metacognitive and cultural cognition accounts jointly explain believing, and spreading of contested information*. <https://doi.org/10.31234/osf.io/2n75x>

Garrett, P. M., White, J. P., Luo, Y., Dennis, S., Geard, N., Little, D. R., ... **Herzog**, S. M. ... Kashima, Y. (2022, October 13). *COVID-19, national culture, and privacy calculus: factors predicting the cross-cultural acceptance and uptake of contact-tracing technologies*. <https://doi.org/10.31234/osf.io/zeqn7>

Analytis, P. P., Schnabel, T., **Herzog**, S. M., Barkoczi, D., & Joachims, T. (2017, June 27). *A preference elicitation interface for collecting rich recommender datasets*. <https://arxiv.org/abs/1706.08184>

Peer-reviewed publications

* equal contribution / shared authorship | \$ senior author

Abels, C. M., Lopez-Lopez, E., Burton, J. W., Holford, D. L., Brinkmann, L., **Herzog**, S. M., & Lewandowsky, S. (2025). The governance & behavioral challenges of generative artificial intelligence's hypercustomization capabilities. *Behavioral Science & Policy*, 23794607251347020. <https://doi.org/10.1177/23794607251347020>

Lopez-Lopez, E., & **Herzog\$**, S. M. (2025). Surfacing citizens' policy perspectives at scale in the age of large language models. *Behavioral Science & Policy*, 23794607251346311. <https://doi.org/10.1177/23794607251346311>

Lopez-Lopez, E., Abels, C. M., Holford, D., **Herzog**, S. M., & Lewandowsky, S. (2025). Generative artificial intelligence-mediated confirmation bias in health information seeking. *Annals of the New York Academy of Sciences*, 1150(1), 23–36. <https://doi.org/10.1111/nyas.15413>

Herzog, S. M., & Hertwig, R. (2025). Boosting: Empowering citizens with behavioral science. *Annual Review of Psychology*, 76, 851–881. <https://doi.org/10.1146/annurev-psych-020924-124753>

Zöller, N., Berger, J., Lin, I., Fu, N., Komarneni, J., Barabucci, G., Laskowski, K., Shia, V., Harack, B., Chu, E. A., Trianni, V., Kurvers\$, R. H. J. M., & **Herzog\$**, S. M. (2025). Human-AI collectives most accurately diagnose clinical vignettes. *Proceedings of the National Academy of Sciences of the United States of America*, 122(24) e2426153122. <https://doi.org/10.1073/pnas.2426153122>

Blanchard, M. D., **Herzog**, S. M., Kämmer, J. E., Zöller, N., Kostopoulou, O., & Kurvers, R. H. J. M. (2024). Collective intelligence increases diagnostic accuracy in a general practice setting. *Medical Decision Making*, 44(4), 451–462. <https://doi.org/10.1177/0272989X241241001>

Burton, J. W. Lopez-Lopez, E., Hechtlinger, S. Rahwan, Z., Aeschbach, S., Bakker, M. A., Becker, J. A., Berditchevskaia, A., Berger, J., Brinkmann, L., Flek, L., **Herzog**, S. M., Huang, S. S., Kapoor, S., Narayanan, A., Nussberger, A.-M., Yasseri, T., Nickl, P., Almaatouq, A., Hahn, U., Kurvers, R., Leavy, S., Rahwan, I., Siddarth, D., Siu, A., Woolley, A. W., Wulff, D. U., & Hertwig, R. (2024). How large language models can reshape collective intelligence. *Nature Human Behaviour*, 8, 1643–1655. <https://doi.org/10.1038/s41562-024-01959-9> | non-paywalled access: <https://rdcu.be/dUytc>

Geers, M., Fischer, H., Lewandowsky, S., & **Herzog\$**, S. M. (2024). The political (a)symmetry of metacognitive insight into detecting misinformation. *Journal of Experimental Psychology: General*, 153(8), 1961–1972. <https://doi.org/10.1037/xge0001600>

Geers, M., Swire-Thompson, B., Lorenz-Spreen, P., **Herzog**, S. M., Kozyreva, A., & Hertwig, R. (2024). The online misinformation engagement framework. *Current Opinion in Psychology*, 55, 101739. <https://doi.org/10.1016/j.copsyc.2023.101739>

Herzog, S. M., & Franklin, M. (2024). Boosting human competences with interpretable and explainable artificial intelligence. *Decision*, 11(4), 493–510. <https://doi.org/10.1037/dec0000250> | postprint: <https://hdl.handle.net/21.11116/0000-000F-FEE4-2>

Kopsacheilis, O., Analytis, P. P., Kaushik, K., **Herzog**, S. M., Bahrami, B., & Deroy, O. (2024). Crowdsourcing the assessment of wine quality: Vivino ratings, professional critics, and the weather. *Journal of Wine Economics*, 19(3), 285–304. <https://doi.org/10.1017/jwe.2024.20>

Kozyreva, A., Lorenz-Spreen, P., **Herzog**, S. M., Ecker, U. K. H., Lewandowsky, S., Hertwig, R., ... Wineburg, S. (2024). Toolbox of individual-level interventions against online misinformation. *Nature Human Behaviour*, 8, 1044–1052. <https://doi.org/10.1038/s41562-024-01881-0> | non-paywalled access: <https://rdcu.be/dH6AE>

Wulf, M., Yesilada, M., Holford, D., Abels, C. M., Radosevic, M., Stuchly, E., Taylor, K., Ye, S., Saxena, G., El-Halaby, G., **Herzog**, S. M., Lewandowsky, S., & Hahn, U. (2024). Tracking the development of COVID-19-related PsyArXiv preprints. *Collabra: Psychology*, 10(1), 121378. <https://doi.org/10.1525/collabra.121378>

Hertwig*, R., **Herzog***, S. M., Kozyreva, A. (2023). Blinding to circumvent human biases: Deliberate ignorance in humans, institutions, and machines. *Perspectives in Psychological Science*, 19(5), 849–859. <https://doi.org/10.1177/17456916231188052>

Kurvers, R. H. J. M., Nuzzolese, A. G., Russo, A., Barabucci, G., **Herzog**, S. M., & Trianni, V. (2023). Automating hybrid collective intelligence in open-ended medical diagnostics. *Proceedings of the National Academy of Sciences*, 120(34), e2221473120. <https://doi.org/10.1073/pnas.2221473120>

Holford, D., Fasce, A., Tapper, K., Demko, M., Lewandowsky, S., Hahn, U., ... **Herzog**, S. M., & Alladin, S. (2023). Science communication as a collective intelligence endeavor: A manifesto and examples for implementation. *Science Communication*, 45(4), 539–554. <https://doi.org/10.1177/10755470231162634>

Kozyreva, A., **Herzog**, S. M., Lewandowsky, S., Hertwig, R., Lorenz-Spreen, P., Leiser, M., & Reifler, J. (2023). Resolving content moderation dilemmas between free speech and harmful misinformation. *Proceedings of the National Academy of Sciences of the United States of America*, 120(7), e2210666120. <https://doi.org/10.1073/pnas.2210666120>

Trianni, V., Nuzzolese, A. G., Porciello, J., Kurvers, R. H. J. M., **Herzog**, S. M., Barabucci, G., Berditchevskaia, A., & Fung, F. (2023). Hybrid collective intelligence for decision support in complex open-ended domains. In *HHAI 2023: Augmenting Human Intellect* (pp. 124–137). IOS Press. <https://doi.org/10.3233/FAIA230079>

Litvinova*, A., Kurvers, R. H. J. M., Hertwig, R., & **Herzog****, S. M. (2022). How experts' own inconsistency relates to their confidence and between-expert disagreement. *Scientific Reports*, 12, 9273. <https://doi.org/10.1038/s41598-022-12847-5>

Roozenbeek, J., Maertens, R., **Herzog**, S. M., Geers, M., Kurvers, R. H. J. M., Sultan, M., & van der Linden, S. (2022). Susceptibility to misinformation is consistent across question framings and response modes and better explained by myside bias and partisanship than analytical thinking. *Judgment and Decision Making*, 17(3), 547–573. <http://journal.sjdm.org/22/220228/jdm220228.pdf>

Sultan, M., Tump, A. N., Geers, M., Lorenz-Spreen, P., **Herzog**, S. M., & Kurvers, R. H. J. M. (2022). Time pressure reduces misinformation discrimination ability but does not alter response bias. *Scientific Reports*, 12, 22416. <https://doi.org/10.1038/s41598-022-26209-8>

Kozyreva*, A., Lorenz-Spreen, P., Hertwig, R., Lewandowsky, S., & **Herzog****, S. M. (2021). Public attitudes towards algorithmic personalization and use of personal data online: Evidence from Germany, Great Britain, and the US. *Humanities & Social Sciences Communications*, 8, 117. <https://doi.org/10.1057/s41599-021-00787-w>

Kozyreva, A., Lorenz-Spreen, P., Lewandowsky, S., Garrett, P. M., **Herzog**, S. M., Pachur, T., & Hertwig, R. (2021). Psychological factors shaping public responses to COVID-19 digital contact tracing technologies in Germany. *Scientific Reports*, 11, 18716. <https://doi.org/10.1038/s41598-021-98249-5>

Kurvers, R. H. J. M., **Herzog**, S. M., Hertwig, R., Krause, J., & Wolf, M. (2021). Pooling decisions decreases variation in response bias and accuracy. *iScience*, 102740. <https://doi.org/10.1016/j.isci.2021.102740>

Lorenz-Spreen*, P., Geers, M., Pachur, T., Hertwig, R., Lewandowsky, S., & **Herzog***\$, S. M. (2021). Boosting people's ability to detect microtargeted advertising. *Scientific Reports*, 11, 15541. <https://doi.org/10.1038/s41598-021-94796-z>

Analytis, P. P., Barkoczi, D., Lorenz-Spreen, P., & **Herzog\$**, S. M. (2020). The structure of social influence in recommender networks. In *WWW '20: Proceedings of the 2020 International World Wide Web Conference*. Taipei, Taiwan - April 20-24, 2020. <https://doi.org/10.1145/3366423.3380020>

Fleischhut, N., **Herzog**, S. M., & Hertwig, R. (2020). Weather literacy in times of climate change. *Weather, Climate and Society*, 12, 435–452. <https://doi.org/10.1175/WCAS-D-19-0043.1>

Herzog*, S. M., Jenny*, M. A., Nickel, C. H., Nieves Ortega, R., & Bingisser, R. (2020). Emergency department patients with weakness or fatigue: Can physicians predict their outcomes at the front door? A prospective observational study. *PLOS ONE*, 15, e0239902. <https://doi.org/10.1371/journal.pone.0239902>

Keller, N., Jenny, M. A., Spies, C. A., & **Herzog**, S. M. (2020). Augmenting decision competence in healthcare using AI-based cognitive models. In *2020 IEEE International Conference on Healthcare Informatics (ICHI)* (pp. 553-556). Piscataway, NJ: IEEE. <https://doi.org/10.1109/ICHI48887.2020.9374376>

Krockow, E. M., Kurvers, R. H. J. M., **Herzog**, S. M., Kämmer, J. E., Hamilton, R. A., Thilly, N., ... & Pulcini, C. (2020). Harnessing the wisdom of crowds can improve guideline compliance of antibiotic prescribers and support antimicrobial stewardship. *Scientific Reports*, 10, 1-12. <https://doi.org/10.1038/s41598-020-75063-z>

Litvinova*, A., **Herzog***, S. M., Kall, A. A., Pleskac, T. J., & Hertwig, R. (2020). How the “wisdom of the inner crowd” can boost accuracy of confidence judgments. *Decision*, 7, 183–211. <https://doi.org/10.1037/dec0000119>

Molleman, L., Tump, A. N., Gradassi, A., **Herzog**, S. M., Jayles, B., Kurvers, R. H. J. M., & van den Bos, W. (2020). Strategies for integrating disparate social information. *Proceedings of the Royal Society B: Biological Sciences*, 287(1939), 20202413. <https://doi.org/10.1098/rspb.2020.2413>

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Other publications

* equal contribution / shared authorship | \$ senior author

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Schooler, L. J., Hertwig, R., & **Herzog**, S. M. (2012). How smart forgetting helps heuristic inference. In P. M. Todd, Gigerenzer, G. & the ABC Research Group, *Ecological rationality: Intelligence in the world* (pp. 144–166). Oxford University Press.

Teaching, training, supervision, mentoring, and lab culture

Teaching approach

My teaching focuses on boosting students' problem-solving skills. To this end, I combine theoretical inputs, concrete examples, case studies, and—where feasible—collaborative activities among students. Example activities to complement standard teaching approaches include: interactive tasks during sessions (e.g., getting input via wiki surveys); interactive online apps that illustrate and explain key concepts; using judgments and decisions from students themselves to illustrate and explain key concepts; and case studies co-created by small student groups and myself. Some of these activities are only feasible in smaller groups, others are also feasible in larger groups and lectures. To keep students engaged—especially in large groups or when covering abstract topics—I link concepts to real-world applications, use live examples from current events or research, and invite active participation through discussion and reflection.

I have experience with hybrid and online teaching formats and use digital tools (e.g., collaborative whiteboards, polling tools, interactive apps) to foster engagement in remote or blended settings. In my courses, I emphasize critical thinking and the application of knowledge to real-world scenarios, encouraging students to engage with contemporary tools and technologies. Recognizing the growing influence of AI and LLMs in education, I integrate discussions on their ethical and practical implications. By doing so, I prepare students to critically assess and responsibly utilize these technologies in their academic and professional pursuits. Understanding that AI systems can inadvertently perpetuate biases, I also incorporate discussions about the ethical use of AI and the importance of diversity in training data. This ensures students are aware of potential biases and are equipped to critically evaluate AI applications in their respective fields.

I aim to create an inclusive learning environment by incorporating diverse perspectives and ensuring that teaching materials and activities are accessible to students with different backgrounds and abilities. I regularly

evaluate the effectiveness of my teaching through student feedback, structured evaluations, and by assessing students' progress through applied projects, presentations, and written assignments.

Teaching experience

I have broad experience in teaching psychological and interdisciplinary topics at the Bachelor, Master, and graduate level in German and English (2 Bachelor lectures; 3 Bachelor seminars; 16 Master seminars; 15+ workshops). I have completed continuing education in teaching skills for higher education on topics such as didactics, rhetorics, problem-based learning, grading, organization, and self evaluation. I am a native German speaker and I am fluent in English. I have broad methodological expertise in cognitive, experimental research, survey research, cognitive modeling of behavioral data, statistics (both Bayesian and frequentist), data science/machine learning/AI, and open and reproducible science practices—expertise, which I am keen to offer to both students and graduate students.

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)
- *Planing, teaching and evaluating courses* [Lehrveranstaltungen planen, durchführen und evaluieren] (2010)
- *Running meetings and discussions* [Diskussionsleitung in der Lehre] (2010)
- *Problem-based learning* [Problemorientiertes Lernen] (2010)
- *Rhetoric* [Rhetorische Kommunikation] (2010)
- *Rhetoric: Explication and narration* [Explikation und Narration] (2011)

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

(master seminar: 2007, 2009, 2010, 2011 at Department of Psychology, University of Basel, Switzerland)

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)

Cognitive Psychology II (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)

Training, supervision, mentoring, and lab culture

I have extensive experience in supervising and mentoring students at various levels: student theses (25+ at the Bachelor level and 25+ at the Master level), interns and lab rotations (10), research assistants (20+), and PhD students (5). I have also mentored four postdocs.

I consider mentoring and lab culture to be key components of academic training. I have co-supervised doctoral researchers at the Max Planck Institute and enjoy supporting early-career researchers in developing their own projects. I prioritize creating a supportive, collaborative lab environment that encourages autonomy, skill development, and research integrity. I see doctoral supervision not just as guidance on research, but as a long-term investment in academic and professional growth.

I aim to develop independent, critical thinkers with a clear path to both academic and applied careers. In my mentoring, I foster intellectual independence while providing conceptual and methodological support. I encourage early-career researchers to present at conferences, engage in open science practices, publish in both disciplinary and interdisciplinary outlets, and build international networks. I actively support PhD students and postdocs in developing research questions, navigating funding landscapes (e.g., through workshops and joint proposals), and planning their academic or applied careers. This includes advising on grant applications, academic writing, and job market strategies. Several of my mentees have published in strong journals, received competitive grants, or moved on to positions in academia or industry.

I have ample experience in teaching and engaging with early-career researchers. I regularly give lectures and workshops at summer schools for PhD students and postdocs, including the Summer Institute on Bounded Rationality at the Max Planck Institute for Human Development. These formats allow me to support early career researchers in sharpening their thinking, broadening their methodological skills, and connecting their work to practical and societal challenges.

Supervision/mentoring history

Current supervisees/mentees are marked in bold; past supervisees/mentees are mentioned with their latest role.

Postdocs: Ying Li, Philipp Lorenz-Spreen, **Nikolas Zöller**, Lisa Oswald

Ph.D. students: **Julian Berger**, 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, 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 Stoltz, Milena Ulrich, Stephanie Zell

Bachelor theses: Béla Ackermann, David Allemann, Alice-Alexandra Atanasiu, Cécile Bucher, Eminia 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

AI Magazine

Behavior Research Methods

Behavioral Science & Policy

Business & Information Systems Engineering

Cognitive Psychology

Cognitive Research: Principles and Implications

Cognitive Science

Collabra

Communications Psychology

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 Behaviour

Nature Review Psychology

Organizational Behavior and Human Decision Processes

Personality and Social Psychology Review

Perspectives on Psychological Science

PLOS ONE

PNAS (Proceedings of the National Academy of Sciences of the United States of America)

PNAS Nexus

Psychological Science (incl. adhoc editor handling)

Psychonomic Bulletin & Review

Risk Analysis

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
Diagnostic Error in Medicine conference (Society to Improve Diagnosis in Medicine)
IC2S2: International Conference for Computational Social Science
SJDM annual conference (Society for Judgment and Decision Making)
SPUDM 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; Ingenieurpsychologie; Medienpsychologie; Methoden und Evaluation)
- International Behavioural Public Policy Association
- Society for Judgment and Decision Making (SJDM)

Invited talks

Zöller, N., & Herzog, S. M. (2025). *Enhancing medical diagnostics with hybrid collective intelligence*. Invited talk at Clinical Excellence Research Center (CERC)'s Faculty Research Seminar, Stanford University, Stanford, US.

Herzog, S. M. (2025). *Boosting: Empowering citizens with behavioral science*. Invited keynote, 9th World Social Marketing Conference, November 3rd-4th 2025, Alicante, Spain.

Herzog, S. M. (2022). *Boosting and the empowerment of good decisions*. Invited keynote, Behavioural Insights Day 2022 organized by the Behavioural Insights Network Netherlands (BIN NL), November 3rd 2022, Den Haag, Netherlands.

Herzog, S. M. (2022). *Boosting: Using behavioral sciences to help people make better decisions by and for themselves*. Invited talk, Summer Institute on Bounded Rationality 2022: Search and learning in an uncertain world, June 14th–22th 2022, Max-Planck-Institute for Human Development, Berlin, Germany.

- Herzog, S. M. (2022). *A simple intervention to inoculate citizens against microtargeting*. Invited talk, PERITIA workshop “How to address an infodemic: Experiments on (dis)Information”. London School of Economics, London.
- Herzog, S. M. (2021). *Risikokompetenz mit Boosts stärken [Boosting risk literacy]*. Invited talk, Verbraucherforschungsforum “Boosting”: Potenziale und Grenzen als Instrument der Verbraucherpolitik [Consumer Research Forum “Boosting”: Potentials and limitations of boosting as an instrument of consumer policy], Max Planck Institute for Human Development, Berlin, Germany.
- Herzog, S. M. (2021). *A simple self-reflection intervention boosts the detection of targeted advertising*. Invited talk at the Marketing Research Workshop, The University of Chicago Booth School of Business.
- Herzog, S. M. (2018). *The wisdom of the inner crowd*. Collective Opinion and Belief Aggregation workshop at the Ecole Normale Supérieure, Paris, France.
- Herzog, S. M. (2017). *Boosting: Behavioral insights beyond nudging*. Invited talk, Behavioural Insights Summer School, University of Erfurt, Erfurt, Germany.
- Herzog, S. M. (2017). *Misses vs. false alarms in high-stakes decisions: Quantifying benefits–harms ratios for policy analysis*. Invited talk, Research Colloquium on Psychology of Decision Making, University of Konstanz, Konstanz, Germany.
- Herzog, S. M., & Luan, S. (2016). *Around nine: The wisdom of small crowds*. Invited talk, Exeter Prize 2016 Workshop “Information aggregation and the wisdom of the crowds”, University of Exeter, Exeter, UK.
- Moussaïd, M., Herzog, S. M., Kämmer, J. E., & Hertwig, R. (2016). *How far can opinions travel in social networks? The spatio-temporal dynamics of judgment propagation in the laboratory*. Invited talk, research colloquium at the Max Planck Institute for Research on Collective Goods, Bonn, Germany.
- 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. (2014). *Harnessing the wisdom of the inner crowd*. Invited talk, Management Seminar series at the Department of Economics and Business, Universitat Pompeu Fabra, Barcelona, Spain.
- Jenny, M. A., & Herzog, S. M. (2014). *How changing research practices and using Bayesian statistics benefits the behavioral sciences*. Joint keynote, 9th Workshop on Clinical Decision Making and Diagnostic Reasoning, Lüneburg, Germany.
- Herzog, S. M. (2013). *The wisdom of crowds within a single mind*. Invited talk, Wisdom of the Crowd Conference of the Institute for Mathematical Behavioral Sciences, University of California, Irvine, USA.
- Herzog, S. M. (2011). The wisdom of crowds within one mind: The benefits of blending opinions and cognitive processes. Invited talk, 2011 International Small-Group Meeting, „What is adaptive cognition and behavior?“, Heidelberg, Germany.
- Herzog, S. M. (2011). *The "wisdom of crowds" in one mind: Dialectical bootstrapping and the benefits of blending different cognitive processes*. Invited talk, Social and Economic Psychology Colloquium, University of Basel, Basel, Switzerland.
- 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.
- Erev, I., Haruvy, E., Herzog, S. M., & Stewart, T. (2009). *The Technion Prediction Tournament: Round table discussion with the winners*. 2009 Asia Pacific meeting of the Economic Science Association (APESA09), Haifa, Israel.
- Herzog, S. M. (2008). *Do differences in fluency make us smart? The ecological rationality of retrieval fluency*. Invited talk, Sonderforschungsbereich 504 Seminars, University of Mannheim, Germany.
- Herzog, S. M., Hertwig, R., & Schooler, L. J. (2006). *The boundedly rational fluency heuristic: Recognition speed as an ecological cue in uncertain environments*. Invited talk, Small-group Meeting on Adaptive Cognition in an Uncertain Environment. Chairs: Klaus Fiedler, Yaakov Kareev, & Peter Freytag, International Science Forum (ISF) of the University of Heidelberg, Heidelberg, Germany.

Organized workshops, symposia and conferences

Last 5 years

HACID webinar “*Collective intelligence in the era of LLMs*”. EU Horizon project “*Hybrid Human Artificial Collective Intelligence in Open-Ended Domains*” (HACID), April 24th 2025. <https://www.hacid-project.eu/hacid-webinar-2/>

LIFE Seminar Winter 2021/2022 “*Seminar on decision-making*”: Session “*Boosting judgment and decision-making*”, November 25th 2021.

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–23th 2021, Max-Planck-Institute for Human Development, Berlin, Germany.

Recent talks and posters

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

Herzog, S. M., & Hertwig, R. (2025). *Boosting: Empowering citizens with behavioral science*. Talk presented at the 2025 Subjective Probability, Utility, and Decision Making (SPUDM) Conference, Lucca, Italy.

Kozyreva, A., Herzog, S. M., Lewandowsky, S., Hertwig, R., Lorenz-Spreen, P., Leiser, M., & Reifler, J. (2023). *Resolving content moderation dilemmas between free speech and harmful misinformation*. Talk presented at the 2023 Subjective Probability, Utility, and Decision Making (SPUDM) Conference, Vienna, Austria.

Herzog, S. M. (2022). *Boosting and the empowerment of good decisions*. Invited keynote, Behavioural Insights Day 2022 organized by the Behavioural Insights Network Netherlands (BIN NL), November 3rd 2022, Den Haag, Netherlands.

Herzog, S. M., & López López, E. (2021). *Assisting behavioral science and evidence-based policy making using online machine tools*. Poster presented at the DFG virtual Research Conference “*Preparedness for future pandemics from a global perspective*”, Bonn, Germany.

Herzog, S. M., Hahn, U., Lewandowsky, S., & Porciello, J. (2021). *Assisting behavioral science and evidence-based policy making using online machine tools*. Talk presented at the 6th International Conference Data for Policy 2021: Lessons for policy-data interactions after Covid-19.

Lorenz-Spreen, P., Geers, M., Pachur, T., Hertwig, R., Lewandowsky, S., & Herzog, S. M. (2021). *Boosting people's ability to detect microtargeted advertising [A simple self-reflection intervention boosts the detection of microtargeted advertising]*. Poster presented at the 28th Subjective Probability, Utility, and Decision Making (SPUDM) Conference, Warwick, UK.

Herzog, S. M. (2021). *A simple self-reflection intervention boosts the detection of targeted advertising*. Invited talk at the Marketing Research Workshop, The University of Chicago Booth School of Business.