

# List of Publications

Jan Sprenger

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## Books

- [B1] Jan Sprenger and Stephan Hartmann. *Bayesian Philosophy of Science*. Oxford: Oxford University Press, 2019.  
— Research monograph applying Bayesian reasoning to various topics in philosophy of science.

## Journal Publications

- [A1] Paul Égré, Lorenzo Rossi, and Jan Sprenger. “De Finettian Logics of Indicative Conditionals. Part I: Trivalent Semantics and Validity”. *Journal of Philosophical Logic* 50 (2021), pp. 187–213.  
— Develops a truth-functional semantics for indicative conditionals with three truth values and studies the appropriate relations of logical consequence.
- [A2] Paul Égré, Lorenzo Rossi, and Jan Sprenger. “De Finettian Logics of Indicative Conditionals. Part II: Proof Theory and Algebraic Semantic”. *Journal of Philosophical Logic* 50 (2021), pp. 215–247.  
— Provides soundness and completeness theorems for the logics developed in Part I, and studies their algebraic properties.
- [A3] Felipe Romero and Jan Sprenger. “Scientific Self-Correction: The Bayesian Way”. *Synthese* 198 (2021), pp. 5803–5823.  
— Comparison of meta-analytic accuracy of replication research under a Bayesian and a frequentist approach to judging the relevance of research findings.
- [A4] Noah van Dongen, Matteo Colombo, Felipe Romero, and Jan Sprenger. “Intuitions About the Reference of Proper Names: A Meta-Analysis”. *Review of Philosophy and Psychology* 12 (2021), pp. 745–774.  
— Meta-analysis of experimental philosophy research on the intercultural variation in judgments on the referents of proper names.
- [A5] Jan Sprenger. “Conditional Degree of Belief”. *Philosophy of Science* 87 (2020), pp. 319–335.  
— Proposes a suppositional analysis of conditional degree of belief and explores the implications for Bayesian inference with statistical models.

- [A6] N. N. N. van Dongen, J. B. van Doorn, Q. F. Gronau, D. van Ravenzwaaij, R. Hoekstra, M. N. Haucke, D. Lakens, C. Hennig, R. D. Morey, S. Homer, A. Gelman, J. Sprenger, and E.-J. Wagenmakers. “Multiple Perspectives on Inference for Two Simple Statistical Scenarios”. *The American Statistician* 73 (2019), pp. 328–339.  
— Shows how exemplary datasets are analyzed by exponents of different statistical schools, and compares the conclusions they draw.
- [A7] Matteo Colombo, Georgi Duev, Michèle Nuijten, and Jan Sprenger. “Statistical reporting inconsistencies in experimental philosophy”. *PLoS ONE* 13 (2018), e0194360. eprint: <https://doi.org/10.1371/journal.pone.0194360>.  
— Investigates the rates of statistical reporting errors in experimental philosophy research and compares them to other behavioral disciplines.
- [A8] Florian Cova, Brent Strickland, Angela Abatista, Aurélien Allard, James Andow, Mario Attie, et al. “Estimating the Reproducibility of Experimental Philosophy”. *Review of Philosophy and Psychology* (2018), pp. 1–36.  
— Collaborative replication project for a representative samples of papers in experimental philosophy.
- [A9] Jan Sprenger. “Foundations for a Probabilistic Theory of Causal Strength”. *Philosophical Review* 127 (2018), pp. 371–398.  
— Axiomatic treatment and representation theorems for probabilistic measures of causal strength, with a normative argument for a particular measure.
- [A10] Jan Sprenger. “The Objectivity of Subjective Bayesianism”. *European Journal for Philosophy of Science* 8 (2018), pp. 539–558.  
— Argues that classifying subjective Bayesian inference as “non-objective” is based on an outdated image of objectivity that neglects recent philosophical progress.
- [A11] Jan Sprenger. “Two Impossibility Results for Popperian Corroboration”. *British Journal for the Philosophy of Science* 69 (2018), pp. 139–159.  
— Motivates the need for a concept of corroboration in hypothesis testing that is distinct from evidential support, and demonstrates impossibility results for an explication along Popperian lines.
- [A12] Garvan Whelan, Roberto Sarmiento, and Jan Sprenger. “Universal-deterministic and probabilistic hypotheses in operation management research: a discussion paper”. *Production, Planning and Control* 29 (2018), pp. 1306–1320.  
— Describes the relevance of Popper’s philosophy of science for hypothesis formation and inference in operations management research.
- [A13] Matteo Colombo, Leandra Bucher, and Jan Sprenger. “Determinants of Judgments of Explanatory Power: Credibility, Generality, and Statistical Relevance”. *Frontiers in Psychology* 8 (2017), p. 1430.  
— Theoretical and empirical study about how probabilistic, causal and explanatory judgments interact, and how one can predict the latter.
- [A14] Jan Sprenger. “Discussion: Beyond Subjective and Objective in Bayesian Statistics”. *Journal of the Royal Statistical Society, Series A* 180 (2017), p. 1119.

- Invited commentary on a paper by Andrew Gelman and Christian Hennig on objectivity in Bayesian inference in the same journal issue.
- [A15] Jan Sprenger and Jacob Stegenga. “Three Arguments for Absolute Outcome Measures”. *Philosophy of Science* 84 (2017), pp. 840–852.  
— Argues on epistemic and decision-theoretic grounds for absolute and against relative outcome measures in medicine (e.g., Risk Ratio, Absolute/Relative Risk Reduction).
- [A16] Jan Sprenger. “The Probabilistic No Miracles Argument”. *European Journal for Philosophy of Science* 6 (2016), pp. 173–189.  
— Gives an analysis of scope and limits of a probabilistic No Miracles Argument, focusing on a situation where scientific knowledge is stable over time.
- [A17] Richard Dawid, Stephan Hartmann, and Jan Sprenger. “The No Alternatives Argument”. *The British Journal for the Philosophy of Science* 66 (2015), pp. 213–234.  
— Investigates scope and validity of the argument that scientists’ failure to find an alternative to an existing theory constitutes evidence for that particular theory.
- [A18] Dominik Klein and Jan Sprenger. “Modelling Individual Expertise in Group Judgements”. *Economics and Philosophy* 31 (2015), pp. 3–25.  
— Analysis under which circumstances a differential weighting of opinions is beneficial to group accuracy, compared to straight averaging.
- [A19] Jan Sprenger. “A Novel Solution of the Problem of Old Evidence”. *Philosophy of Science* 82 (2015), pp. 383–401.  
— Provides an elegant solution to the dynamic Problem of Old Evidence in the tradition of the approaches by Jeffrey and Earman, but with more plausible assumptions.
- [A20] Matteo Colombo and Jan Sprenger. “The Predictive Mind and Chess-Playing. A Reply to Shand (2014)”. *Analysis* 74 (2014), pp. 603–608.  
— A short discussion piece of Shand’s arguments about human cognition, put forward in the very same journal, with an application to chess-playing.
- [A21] Ryan Muldoon, Chiara Lisiciandra, Cristina Bicchieri, Stephan Hartmann, and Jan Sprenger. “On the Emergence of Descriptive Norms”. *Politics, Philosophy and Economics* 13 (2014), pp. 3–22.  
— A probabilistic model for the emergence of descriptive norms, such as fashions or conventions. We study the impact of social sensitivity and extend the model in order to study more complex equilibria.
- [A22] Carlo Martini, Jan Sprenger, and Mark Colyvan. “Resolving Disagreement Through Mutual Respect”. *Erkenntnis* 78 (2013), pp. 881–898.  
— Explores the rationality of consensus procedures that are based on the group members’ mutual respect for each other, with application to factual and value-related disagreements.
- [A23] Cecilia Nardini and Jan Sprenger. “Bias and Conditioning in Sequential Medical Trials.” *Philosophy of Science* 80 (2013), pp. 1053–1064.

- A suggestion to improve the practice of clinical trials by adopting a particular statistical framework: conditional frequentist reasoning, a compromise between Bayesian and frequentist methods.
- [A24] Jan Sprenger. “A Synthesis of Hempelian and Hypothetico-Deductive Confirmation”. *Erkenntnis* 78 (2013), pp. 727–738.  
— Synthesizes two different and allegedly opposed research programs in confirmation theory by means of a particular logical tool.
- [A25] Jan Sprenger. “Testing a Precise Null Hypothesis: The Case of Lindley’s Paradox.” *Philosophy of Science* 80 (2013), pp. 733–744.  
— An analysis of Lindley’s Paradox and the rationale behind point null significance testing with the help of Bernardo’s reference prior approach.
- [A26] Jan Sprenger. “The Role of Bayesian Philosophy within Bayesian Model Selection”. *European Journal for Philosophy of Science* 2 (2013), pp. 101–114.  
— An analysis of how much Bayesian reasoning there actually is in model selection procedures that are commonly classified as “Bayesian”.
- [A27] Stephan Hartmann and Jan Sprenger. “Judgment Aggregation and the Problem of Tracking the Truth”. *Synthese* 187 (2012), pp. 209–221.  
— Conducts an epistemic analysis of judgment aggregation procedures that aim not only at a correct decision, but also at the right “reasons” for that decision.
- [A28] Jan Sprenger. “Environmental Risk Analysis: Robustness Is Essential for Precaution”. *Philosophy of Science* 79 (2012), pp. 881–892.  
— An analysis of what the Precautionary Principle implies for environmental risk analysis based on scientific models, with applications to risk assessment.
- [A29] Jan Sprenger. “The Renegade Subjectivist : José Bernardo’s Reference Bayesianism”. *Rationality, Markets and Morals* 3 (2012), pp. 1–13.  
— A critical, but sympathetic comment on Bernardo’s reference Bayesianism from a philosophical point of view.
- [A30] Jonah N. Schupbach and Jan Sprenger. “The Logic of Explanatory Power”. *Philosophy of Science* 78 (2011), pp. 105–127.  
— Sets up and defends a specific probabilistic measure of explanatory power arguing from first principles.
- [A31] Jan Sprenger. “Hypothetico-Deductive Confirmation.” *Philosophy Compass* 6 (2011), pp. 497–508.  
— Positioned overview of the history and current state of hypothetico-deductive confirmation.
- [A32] Jan Sprenger. “Science Without (Parametric) Models: The Case of Bootstrap Resampling”. *Synthese* 180 (2011), pp. 65–76.  
— A case study on data-driven inference in statistics and the interplay of top-down and bottom-up modeling, conducted with the help of bootstrap resampling techniques.

- [A33] Jan Sprenger and Remco Heesen. “The Bounded Strength of Weak Expectations”. *Mind* 120 (2011), pp. 819–832.  
— Explores the scope of the “weak expectations” approach by Easwaran (2008, *Mind*): they do not have normative force by themselves, but they are the intersubjective consensus value in a bounded utility framework.
- [A34] Stephan Hartmann, Gabriella Pigozzi, and Jan Sprenger. “Reliable Methods of Judgment Aggregation”. *Journal of Logic and Computation* 20 (2010), pp. 603–617.  
— Combines analytical methods and numerical simulations in order to compare the epistemic value of various judgment aggregation procedures.
- [A35] Stephan Hartmann and Jan Sprenger. “The Weight of Competence Under a Realistic Loss Function”. *Logic Journal of the IGPL* 18 (2010), pp. 346–352.  
— Argues for a more realistic loss function in information pooling problems, and determines the optimal relative weights of individual contributions, dependent on the competence of the sources.
- [A36] Jan Sprenger. “Probability, rational single-case decisions and the Monty Hall Problem”. *Synthese* 174 (2010), pp. 331–340.  
— Rebuts an argument by Baumann against the standard solution of the Monty Hall Problem, and defends the normative force of probabilistic arguments in single cases.
- [A37] Stephan Hartmann, Carlo Martini, and Jan Sprenger. “Consensual Decision-Making Among Epistemic Peers”. *Episteme* 6 (2009), pp. 110–129.  
— Generalizes Elga’s notion of an epistemic peer, and shows under which conditions networks of epistemic peers will achieve consensus on their opinions
- [A38] Jan Sprenger. “Evidence and Experimental Design in Sequential Trials”. *Philosophy of Science* 76 (2009), pp. 637–649.  
— Defends the Bayesian position on the post-experimental irrelevance of experimental design and stopping rules, both from a methodological and a decision-theoretic perspective.
- [A39] Jan Sprenger. “Statistics between Inductive Logic and Empirical Science”. *Journal of Applied Logic* 7 (2009), pp. 239–250.  
— Argues that the “inductive logic” understanding of statistics is misplaced: in actual practice, statistics more and more resembles an empirical science than a branch of mathematics.

## Contributions to Encyclopedias

- [E1] Julian Reiss and Jan Sprenger. “Scientific Objectivity”. In: *The Stanford Encyclopedia of Philosophy*. Ed. by Ed Zalta. Metaphysics Research Lab, Stanford University, 2014/20.  
— Encyclopedia entry covering different aspects of objectivity in science. Substantial revisions in 2020.
- [E2] Jan Sprenger and Naftali Weinberger. “Simpson’s Paradox”. In: *The Stanford En-*

*cyclopedia of Philosophy*. Ed. by Edward N. Zalta. Metaphysics Research Lab, Stanford University, 2021.

— Encyclopedia entry that characterizes Simpson’s paradox mathematically and explains its significance for causal reasoning and philosophical research questions.

## Contributions to Edited Volumes

- [C1] Paul Égré, Lorenzo Rossi, and Jan Sprenger. “Gibbardian Collapse and Trivalent Conditionals”. In: *Conditionals: Logic, Linguistics and Psychology*. Ed. by Stefan Kaufmann and David Over. New York: Palgrave MacMillan, forthcoming.  
— Gives an exact logical reconstruction of Gibbard’s collapse argument for indicative conditionals, and shows how it is avoided when conditionals have trivalent truth conditions.
- [C2] William Peden and Jan Sprenger. “Significance Testing in Economics”. In: *Handbook of the Philosophy of Economics*. Ed. by Conrad Heilmann and Julian Reiss. London: Routledge, forthcoming.  
— Survey article on history and methodological problems of significance testing in economics.
- [C3] Jan Sprenger. “Hempel and Confirmation Theory”. In: *Routledge Handbook of Logical Empiricism*. Ed. by Christoph Limbeck-Lilienau and Thomas Uebel. London: Routledge, forthcoming.  
— Survey article on Hempel’s contributions to confirmation theory at various stages of his career.
- [C4] Jan Sprenger. “The Paradoxes of Confirmation”. In: *Routledge Handbook of the Philosophy of Evidence*. Ed. by Clayton Littlejohn and Maria Lasonen-Aarnio. London: Routledge, forthcoming.  
— Survey article on the Bayesian and non-Bayesian paradoxes of confirmation in philosophy of science.
- [C5] Carlo Martini and Jan Sprenger. “Opinion Aggregation and Individual Expertise”. In: *Scientific Collaboration and Collective Knowledge*. Ed. by Thomas Boyer-Kassem, Conor Mayo-Wilson, and Michael Weisberg. New York: Oxford University Press, 2017, pp. 180–201.  
— An overview on probability and judgment aggregation methods, with a focus on the role of experts and differential weighting procedures.
- [C6] Jan Sprenger. “Bayesianism and Frequentism in Statistical Inference”. In: *Handbook of Philosophy of Probability*. Ed. by Alan Hájek and Christopher Hitchcock. Oxford: Oxford University Press, 2016, pp. 382–405.  
— Handbook article that contrasts Bayesian and frequentist approaches to statistical inference, with particular attention to hypothesis testing.
- [C7] Jan Sprenger. “Bayésianisme versus fréquentisme en inférence statistique”. In: *Les méthodes bayésiennes, sciences et épistémologie*. Ed. by Isabelle Drouet. Paris: Éditions matériologiques, 2016, pp. 167–192.

- Abridged and revised version in French of the homonymous article for the OUP handbook.
- [C8] Jan Sprenger. “Confirmation and Induction”. In: *Handbook of Philosophy of Science*. Ed. by Paul W. Humphreys. Oxford: Oxford University Press, 2016, pp. 185–209.  
— Survey article on confirmation theory, both from a qualitative and a probabilistic/statistical angle.
- [C9] Jan Sprenger and David Teira. “The Ethics of Statistical Testing”. In: *Handbook of the Philosophical Foundations of Business Ethics*. Ed. by Christoph Luetge. Berlin: Springer, 2013, pp. 1535–1549.  
— Handbook article on methodology and ethical issues in statistical hypothesis testing.
- [C10] S. Hartmann and J. Sprenger. “Mathematics and Statistics in the Social Sciences”. In: *Handbook of the Philosophy of Social Sciences*. Ed. by Ian C Jarvie and Jesús Zamora Bonilla. London: SAGE Publications, 2011, pp. 594–612.  
— Overview of the development of mathematical and statistical modeling in the social sciences, with special attention on methodological problems.
- [C11] Stephan Hartmann and Jan Sprenger. “Bayesian Epistemology”. In: *Routledge Companion to Epistemology*. Ed. by Duncan Pritchard. London: Routledge, 2010, pp. 609–620.  
— Introduction to Bayesian epistemology that explains the principles of probabilistic modeling and presents some applications, such as formal accounts of coherence and confirmation.
- [C12] Jan Sprenger. “Hempel and the Paradoxes of Confirmation”. In: *Handbook of the History of Logic*. Ed. by Dov M Gabbay, Stephan Hartmann, and John Woods. Vol. 10. Amsterdam: North-Holland, 2010, pp. 235–263.  
— Handbook article that connects Hempel’s writings on confirmation with modern, probabilistic approaches to the paradox of the ravens.
- [C13] Jan Sprenger. “Statistical inference without frequentist justifications”. In: *EPSA Epistemology and Methodology of Science: Launch of the European Philosophy of Science Association*. Berlin: Springer, 2010, pp. 289–297.  
— Develops an anti-metaphysical conception of probability which is able to account for the use of probabilistic inference in statistical modeling.

## Conference Proceedings

- [P1] Matteo Colombo, Leandra Bucher, and Jan Sprenger. “Determinants of judgments of explanatory power: Credibility, Generalizability, and Causal Framing”. In: *Proceedings of the 39th Annual Conference of the Cognitive Science Society*. Austin/TX: Cognitive Science Society, 2017, pp. 1806–1811.  
— Empirical Study on the interrelation between causal, explanatory and probabilistic judgments. (See also the “Frontiers” article from 2017 by the same authors.)
- [P2] Matteo Colombo, Marie Postma, and Jan Sprenger. “Explanatory Value, Probability and Abductive Inference”. In: *Proceedings of the 38th Annual Conference of the*

- Cognitive Science Society*. Ed. by A. Papafragou, D. Grodner, D. Mirman, and J.C. Trueswell. Cognitive Science Society, 2016, pp. 432–437.  
 — Explorative study about psychological associations between explanatory power and other cognitive values.
- [P3] Jun Lai, Emiel Krahmer, and Jan Sprenger. “The Learnability of Auditory Center-embedded Recursion”. In: *Proceedings of the 37th Annual Meeting of the Cognitive Science Society*. Ed. by D.C. Noelle. Austin/TX: Cognitive Science Society, 2015, pp. 1237–1243.  
 — Extends the 2014 paper by the same authors in the direction of learning recursive structures in the auditory modality.
- [P4] Jun Lai, Emiel Krahmer, and Jan Sprenger. “Studying Frequency Effects in Learning Center-embedded Recursion”. In: *Proceedings of the 36th Annual Meeting of the Cognitive Science Society*. Ed. by P. Bello, M. Guarini, M. McShane, and B. Scasselati. Austin/TX: Cognitive Science Society, 2014, pp. 797–802.  
 — Short article about the learning of recursive structures in an artificial grammar paradigm, comparing various modalities for presentation of the input.
- [P5] Jan Sprenger. “Discussion: Integrated Objective Bayesian Estimation and Hypothesis Testing”. In: *Bayesian Statistics 9: Proceedings of the Ninth Valencia International Meeting*. Ed. by José M Bernardo. London: Oxford University Press, 2012, pp. 47–48.  
 — Short discussion contribution on José Bernardo’s reference prior approach to hypothesis testing and parameter estimation.

## Edited Special Issues and Topical Collections

- [S1] Mattia Andreoletti and Jan Sprenger, eds. *European Journal for the Philosophy of Science* (2022): Topical Collection “Philosophical Perspectives on the Replicability Crisis”
- [S2] Matteo Colombo, Raoul Gervais, and Jan Sprenger, eds. *Synthese: Vol. 194, No. 12*. (2017): Special Issue “Objectivity in Science”
- [S3] Rogier De Langhe, Stephan Hartmann, and Jan Sprenger, eds. *Studies in History and Philosophy of Science: Vol. 46, No. 1* (2014): Special Issue “Progress in Science”
- [S4] Cyrille Imbert, Ryan Muldoon, Jan Sprenger, and Kevin Zollman, eds. *Synthese: Vol. 191, No. 1* (2014): Special Issue “The Collective Dimension of Science”
- [S5] Stephan Hartmann and Jan Sprenger, eds. *European Journal for the Philosophy of Science: Vol. 2, No. 2*. (2012): Special Issue “The Future of Philosophy of Science”
- [S6] Stephan Hartmann, Carlo Martini, and Jan Sprenger, eds. *The Logic Journal of the IGPL: Vol. 18, No. 2* (2010): Special Issue “Formal Modeling in Social Epistemology”



## Book Reviews

- [R1] Jan Sprenger. "A unifying framework for probabilistic reasoning". *Metascience* 21 (2011). Review of R. Haenni, J.W. Romeijn, G. Wheeler and J. Williamson: "Probabilistic Logic and Probabilistic Networks", pp. 459–462

## PhD and MA Thesis

- [T1] Jan Sprenger. "Confirmation and Evidence". PhD thesis. Faculty of Philosophy, University of Bonn, 2008
- [T2] Jan Sprenger. "Skalenlimiten interagierender Teilchensysteme". MA thesis. Department of Mathematics, University of Bonn, 2005

## Valorization and Outreach

- [V1] Samuele Iaquinto and Jan Sprenger. *Intelligenza Naturale e Artificiale: il gioco di specchi è appena iniziato*. "La Stampa", published online as part of the "tutto-scienze" supplement on 1 Dec 2021. 2021
- [V2] Jan Sprenger. *Auf dem Wege zur Schachindustrie?* SCHACH 10/2020, pp. 44-48. 2020
- [V3] Jan Sprenger. "Ons zicht op de werkelijkheid wordt verstoord". Interview in "NRC Handelsblad" (Dutch newspaper), print issue of 9 April 2016. <http://www.nrc.nl/handelsblad/2016/04/09/ons-zicht-op-de-werkelijkheid-wordt-verstoord-1605726>. 2016
- [V4] Richard Dawid, Stephan Hartmann, and Jan Sprenger. *Inferring the unconfirmed: the no alternative argument*. Contribution to the Oxford University Press Blog, 27 April 2014. <https://blog.oup.com/2014/04/inferring-the-unconfirmed-the-no-alternatives-argument/>. 2014
- [V5] Jan Sprenger. "Statistici moeten meer oog hebben voor subjectiviteit". Feature in "Trouw" (Dutch newspaper), 10 January 2014. <https://www.trouw.nl/nieuws/statistici-moeten-meer-oog-hebben-voor-subjectiviteit~b05079ba>. 2014
- [V6] Michael Krämer. *There is No Alternative!* Feature on the homonymous article by Dawid, Hartmann and Sprenger in "The Guardian", 4 May 2013. <https://www.guardian.co.uk/science/life-and-physics/2013/may/04/no-alternative-bayes-penalties-philosophy-thatcher-merkel>. 2013
- [V7] Jan Sprenger. *Precaution with the Precautionary Principle*. "Decision Point", Vol. 48, No. 7. 2011. 2011
- [V8] Jan Sprenger. *Reply to survey: "Grootste Problemem van NL"*. "De Groene Amsterdammer", April 2011. 2011