

FERDINANDA WIJERMANS

Researcher, Experimenter, Modeller, Integrator

1981-02-11

EMPLOYMENT HISTORY

Associate professor | Collective action in the commons

**Stockholm Resilience Centre, Stockholm University
and the Institute for Future Studies**

📅 Nov 2022 – Ongoing 📍 Sweden

- Research focus: cooperation and norms in collective risk dilemmas and cooperation and sustainable resource use in commons dilemmas.
- Methodology: combining controlled behavioural experiments and agent-based modelling (ABM). Strong focus on designing and conducting behavioural field experiments and complementary qualitative and quantitative methods.

Researcher | Collective action in the commons

Institute for Future Studies

📅 Nov 2021 – Oct 2022 📍 Sweden

Stockholm Resilience Centre, Stockholm University

📅 Aug 2016 – Oct 2022 📍 Sweden

Idem as Assoc. Prof with an additional strong focus on integrating (ways of obtaining) knowledge with ABM to enable a understanding of human behaviour and method development to study complex social systems.

Post Doc | Collective action in the commons

Stockholm Resilience Centre, Stockholm University

📅 Oct 2012 – July 2016 📍 Sweden

Idem as researcher role, but with a focus on behavioural lab (instead of field) experiments in combination with ABM.

Post Doc | Decision making under uncertainty

Department of Physical Geography, Utrecht University

📅 Nov 2010 – Oct 2012 📍 The Netherlands

Supporting water policy and sustainable river management. Engage ABM and participatory processes of and with policy decision-making as social uncertainty.

Freelance business consultant | Communication systems

ProRail NS (Dutch Railways)

📅 May 2010 – Sep 2010 📍 The Netherlands

Supporting software transition at ProRailNS - InfoPlus. Activities: user-education, user-support and software testing. Working on the interface between users, management and programmers.

PhD student | Crowd behaviour modelling

University of Groningen & TNO

📅 Sep 2005 – Apr 2011 📍 The Netherlands

Engage in theory development of behavioural mechanisms underlying crowd behaviour through integrating theories from Social psychology into an architecture from cognitive science.

EDUCATION

Ph.D. Social Simulation

University of Groningen

📅 Sept 2005 – Apr 2011

Thesis: Understanding crowd behaviour
M.Sc. Artificial Intelligence

University of Groningen

📅 Sept 2001 – Aug 2005

Thesis: Crowd modelling and control, in a RoboCup Rescue domain

Propaedeutics¹ Computer Science

University of Groningen

📅 Sept 2000 – Aug 2002

LANGUAGES

Dutch
English
German
Swedish



TRAINING & SKILLS

Skills



¹This reflects the first year of a study.

PUBLICATIONS

Monographs

- Wijermans, Nanda (2011b). *Understanding Crowd Behaviour*. Groningen: University of Groningen. ISBN: 978-90-367-4839-1. URL: <http://his.diva-portal.org/smash/get/diva2:1156189/FULLTEXT01.pdf>.

Agent-based models

- Wijermans, Nanda and Helen Fischer (2022). *AgentEx-Meta*. NetLogo. URL: doi.org/10.25937/cs13-mr12.
- Wijermans, Nanda, Maja Schlüter, et al. (2020). *FIBE - FIscher BEhaviour model*. Version 1.0.0. URL: doi.org/10.25937/xzxh-7667.
- Wijermans, Nanda, Caroline Schill, et al. (2016). *AgentEx*. Version 1.0.0. URL: doi.org/10.25937/js95-6d78.
- Wijermans, Nanda (2013). *CROSS*. Java. Version 1.1.0. URL: www.comses.net/codebases/2310/releases/1.1.0/.

Journal Articles

- Berger, Uta et al. (2024). "Towards reusable building blocks for agent-based modelling and theory development". In: *Environmental Modelling & Software* 175, p. 106003. ISSN: 1364-8152. DOI: 10.1016/j.envsoft.2024.106003.
- Klein, Anja et al. (2024). "From situated knowledges to situated modelling: a relational framework for simulation modelling". In: *Ecosystems and People* 20.1, p. 2361706. ISSN: 2639-5908. DOI: 10.1080/26395916.2024.2361706.
- Antosz, Patrycja et al. (2023). "What do you want theory for? - A pragmatic analysis of the roles of "theory" in agent-based modelling". In: *Environmental Modelling & Software* 168, p. 105802. ISSN: 1364-8152. DOI: 10.1016/j.envsoft.2023.105802.
- Fischer, Helen, Nanda Wijermans, and Maja Schlüter (2023). "Testing the Social Function of Metacognition for Common-Pool Resource Use". In: *Cognitive Science* 47.3. ISSN: 0364-0213. DOI: 10.1111/cogs.13212.
- Scholz, Geeske, Nanda Wijermans, et al. (2023). "Social Agents? A Systematic Review of Social Identity Formalizations". In: *Journal of Artificial Societies and Social Simulation* 26.2. DOI: 10.18564/jasss.5066.
- Wijermans, Nanda, Geeske Scholz, Émile Chappin, et al. (2023). "Agent decision-making: The Elephant in the Room-Enabling the justification of decision model fit in social-ecological models". In: *Environmental Modelling & Software*, p. 105850. ISSN: 1364-8152. DOI: 10.1016/j.envsoft.2023.105850.
- Wijermans, Nanda, Geeske Scholz, Martin Neumann, et al. (2023). "Editorial: Social Identity Modelling". In: *Journal of Artificial Societies and Social Simulation* 26.3. DOI: 10.18564/jasss.5188.
- Lindkvist, Emilie et al. (2022). "Untangling social-ecological interactions: A methods portfolio approach to tackling contemporary sustainability challenges in fisheries". In: *Fish and Fisheries*.
- Wijermans, Nanda, Caroline Schill, et al. (Apr. 2022). "Combining approaches: Looking behind the scenes of integrating multiple types of evidence from controlled behavioural experiments through agent-based modelling". In: *International Journal of Social Research Methodology*, pp. 1–13. ISSN: 1364-5579. DOI: 10.1080/13645579.2022.2050120.
- Constantino, SM et al. (2021). "Cognition and behavior in context: a framework and theories to explain natural resource use decisions in social-ecological systems". In: *Sustainability Science* 16.5, pp. 1651–1671.
- Schlüter, Maja, Emilie Lindkvist, et al. (2021). "Agent-based modelling". In: *The Routledge Handbook of Research Methods for Social-Ecological Systems*, p. 383.
- Lindkvist, Emilie A et al. (2020). "Navigating Complexities: Agent-Based Modeling to Support Research, Governance, and Management in Small-Scale Fisheries". In: *Frontiers in Marine Science* 6, p. 377. DOI: 10.3389/fmars.2019.00733.
- Schwarz, Nina et al. (2020). "Formalising theories of human decision-making for agent-based modelling of social-ecological systems: practical lessons learned and ways forward". In: *Socio-Environmental Systems Modelling* 2, pp. 16340–25. DOI: 10.18174/sesmo.2020a16340.
- Wijermans, Nanda, Wijnand J Boonstra, et al. (2020). "Behavioural diversity in fishing—Towards a next generation of fishery models". In: *Fish and Fisheries* 274.2, pp. 30–19. DOI: 10.1111/faf.12466.
- Adrian, Juliane, Nikolai Bode, Martyn Amos, Mitra Baratchi, Mira Beermann, Maik Boltes, Alessandro Corbetta, Guillaume Dezechache, John Drury, Zhijian Fu, Roland Geraerts, Steve Gwynne, Gesine Hofinger, Aoife Hunt, Tinus Kanters, Angelika Kneidl, Krisztina Konya, Gerta Köster, Mira Küpper, Georgios Michalareas, Fergus Neville, Evangelos Ntontis, Stephen D Reicher, Enrico Ronchi, Andreas Schadschneider, Armin Seyfried, Alastair Shipman, Anna Sieben, Michael Spearpoint, Gavin Brent Sullivan, Anne Templeton, Federico Toschi, Zeynep Yücel, Francesco Zanlungo, Iker Zuriguel, Natalie Van der Wal, et al. (2019). "A Glossary for Research on Human Crowd Dynamics". In: *Collective Dynamics* 4, A19:1–13. DOI: 10.17815/CD.2019.19.

- Adrian, Juliane, Nikolai Bode, Martyn Amos, Mitra Baratchi, Mira Beermann, Maik Boltes, Alessandro Corbetta, Guillaume Dezechache, John Drury, Zhijian Fu, Roland Geraerts, Steve Gwynne, Gesine Hofinger, Aoife Hunt, Tinus Kanters, Angelika Kneidl, Krisztina Konya, Gerta Köster, Mira Küpper, Georgios Michalareas, Fergus Neville, Evangelos Ntontis, Stephen D Reicher, Enrico Ronchi, Andreas Schadschneider, Armin Seyfried, Alastair Shipman, Anna Sieben, Michael Spearpoint, Gavin Brent Sullivan, Anne Templeton, Federico Toschi, Zeynep Yücel, Francesco Zanlungo, Iker Zuriguel, Natalie Van der Wal, et al. (Mar. 2019). "A Glossary for Research on Human Crowd Dynamics". In: *Collective Dynamics* 4, A19–13. DOI: 10.17815/cd.2019.19.
- Bercht, Anna Lena and Nanda Wijermans (2019). "Mind the mind: How to effectively communicate about cognition in social-ecological systems research". In: *AMBIO* 48.6, pp. 590–604. DOI: 10.1007/s13280-018-1099-7.
- Schlüter, Maja, Kirill Orach, et al. (2019). "Toward a methodology for explaining and theorizing about social-ecological phenomena". In: *Current Opinion in Environmental Sustainability* 39, pp. 44–53. DOI: 10.1016/j.cosust.2019.06.011.
- Schlüter, Maja, Andres Baeza, et al. (2017). "A framework for mapping and comparing behavioural theories in models of social-ecological systems". In: *Ecological Economics* 131, pp. 21–35. DOI: 10.1016/j.ecolecon.2016.08.008.
- Schill, Caroline et al. (2016). "Cooperation Is Not Enough—Exploring Social-Ecological Micro-Foundations for Sustainable Common-Pool Resource Use". In: *PLoS ONE* 11.8, e0157796–24. DOI: 10.1371/journal.pone.0157796.
- Wijermans, Nanda, Claudine Conrado, et al. (2016). "A landscape of crowd-management support: An integrative approach". In: *Safety Science* 86.C, pp. 142–164. DOI: 10.1016/j.ssci.2016.02.027.
- Andringa, Tjeerd C, Kirsten A van den Bosch, and Nanda Wijermans (2015). "Cognition from life: the two modes of cognition that underlie moral behavior". In: *Frontiers in Psychology* 6. DOI: 10.3389/fpsyg.2015.00362.
- Offermans, Astrid, Pieter Valkering, Heleen Vreugdenhil, Nanda Wijermans, and Marjolijn Haasnoot (2013). "The Dutch dominant perspective on water; risks and opportunities involved". In: *Journal of Environmental Science and Health, Part A* 48.10, pp. 1164–1177. DOI: 10.1080/10934529.2013.776438.
- Waldherr, Annie and Nanda Wijermans (2013). "Communicating Social Simulation Models to Sceptical Minds". In: *Journal of Artificial Societies and Social Simulations* 16.4. URL: jasss.soc.surrey.ac.uk/16/4/13.html.
- Wijermans, Nanda, René Jorna, Wander Jager, Tony van Vliet, and Otto M J Adang (2013). "CROSS: modelling crowd behaviour with social-cognitive agents". In: *Journal of Artificial Societies and Social Simulation* 16.4. URL: jasss.soc.surrey.ac.uk/16/4/1.html.
- Offermans, Astrid, Pieter Valkering, Heleen Vreugdenhil, and Nanda Wijermans (2012). "Huidige perspectieven op water en consequenties voor draagvlak voor beleid". In: *H2O Tijdschrift voor watervoorziening en waterbeheer* 7, pp. 25–28.
- Vreugdenhil, Heleen and Nanda Wijermans (2012). "De beleidsarena van het deltaprogramma". In: *WATER GOVERNANCE*, pp. 1–9.

Conference Proceedings

- Verhagen, Harko et al., eds. (Aug. 2020). *Advances in Social Simulation: Looking in the Mirror* (Stockholm, Sweden). Cham: Springer. ISBN: 978-3-030-34126-8. DOI: 10.1007/978-3-030-34127-5.

Conference Papers

- Giardini, Francesca et al. (2024). In: *Advances in Social Simulation, Proceedings of the 18th Social Simulation Conference, Glasgow, UK, 4–8 September 2023*. Springer Proceedings in Complexity, pp. 151–162. ISBN: 9783031577840. DOI: 10.1007/978-3-031-57785-7_13.
- Kammler, Christian, Frank Dignum, and Nanda Wijermans (2023). "Advances in Social Simulation, Proceedings of the 17th Social Simulation Conference, European Social Simulation Association". In: pp. 193–205. DOI: 10.1007/978-3-031-34920-1_16.
- Wijermans, Nanda and Harko Verhagen (2023). "Advances in Social Simulation, Proceedings of the 17th Social Simulation Conference, European Social Simulation Association". In: pp. 527–535. DOI: 10.1007/978-3-031-34920-1_42.
- Wijermans, Nanda and Anne Templeton (2022). "Towards More Realism in Pedestrian Behaviour Models: First Steps and Considerations in Formalising Social Identity". In: *Advances in Social Simulation*. Springer, pp. 53–64.
- Wijermans, Nanda and Harko Verhagen (2022). "Fishing Together? Exploring the Murky Waters of Sociality". In: *Multi-Agent-Based Simulation XXII, 22nd International Workshop, MABS 2021, Virtual Event, May 3–7, 2021, Revised Selected Papers*. Lecture Notes in Computer Science, pp. 180–193. ISBN: 9783030945473. DOI: 10.1007/978-3-030-94548-0_14.
- Kammler, Christian, Frank Dignum, Nanda Wijermans, and Helena Lindgren (2021). "Changing Perspectives: Adaptable Interpretations of Norms for Agents". In: *International Workshop on Multi-Agent Systems and Agent-Based Simulation*. Springer, pp. 139–152.

- Scholz, Geeske, Tobias Eberhard, et al. (2021). "Social Identity in Agent-Based Models—Exploring the State of the Art". In: *Advances in Social Simulation, Proceedings of the 15th Social Simulation Conference*. Springer Proceedings in Complexity. 23–27 September 2019, pp. 59–64. ISBN: 9783030615024. DOI: 10.1007/978-3-030-61503-1_6.
- Wijermans, Nanda, Harko Verhagen, and Andreas Lytter (2021). "An Online Implementation of a Virtual Agent-Based Experiment Tool—An Exploration". In: *Advances in Social Simulation, Proceedings of the 15th Social Simulation Conference: 23–27 September 2019*. Ed. by Petra Ahrweiler and Martin Neumann. Springer Proceedings in Complexity, pp. 291–297. ISBN: 9783030615024. DOI: 10.1007/978-3-030-61503-1_29.
- Heidari, Samaneh, Nanda Wijermans, and Frank Dignum (Nov. 2020). "Agents with Dynamic Social Norms". In: vol. 12025. *Multi-Agent-Based Simulation XII*. Springer Berlin Heidelberg, pp. 112–124. ISBN: 978-3-030-60842-2. DOI: 10.1007/978-3-030-60843-9_9.
- Wijermans, Nanda and Elizabeth Drury O'Neill (2020). "Towards modelling interventions in small scale fisheries". In: *Advances in Social Simulation. Springer Proceedings in Complexity*. Ed. by Harko Verhagen et al. Stockholm.
- Wijermans, Nanda and Harko Verhagen (2020). "Forgotten AI? Advancing agent reasoning in models". In: *32nd Swedish Artificial Intelligence Society annual workshop*. URL: www.chalmers.se/SiteCollectionDocuments/Centrum/CHAIR/SAIS2020/SAIS_2020_Wijermans_and_verhagen.pdf.
- Wijermans, Nanda and Maja Schlüter (2014a). "Agent-Based Case Studies for Understanding of Social-Ecological Systems: Cooperation on Irrigation in Bali". In: *Advances in Social Simulation*. Berlin, Heidelberg: Springer Berlin Heidelberg, pp. 295–305. ISBN: 978-3-642-39828-5. DOI: 10.1007/978-3-642-39829-2_26.
- – (2014b). "Modelling cooperation in Bali irrigation". In: *Social Simulation conference 2018*. Barcelona.
- Haasnoot, Marjolijn et al. (2012). "An Integrated Assessment Metamodel for Developing Adaptation Pathways for Sustainable Water Management in the Lower Rhine Delta". In: *International Congress on Environmental Modelling and Software Managing Resources of a Limited Planet*. Leipzig, pp. 1–9.
- Wijermans, Nanda and Marjolijn Haasnoot (2012). "Including policy dynamics to explore water policy pathways." In: *8th Conference of the European Social Simulation Association*. Ed. by Andreas Koch. Salzburg, pp. 175–178.
- Wijermans, Nanda and Heleen Vreugdenhil (2012). "Social uncertainties in social-ecological systems: Policy dynamics in the Dutch Delta programme". In: *International Congress on Environmental Modelling and Software Managing Resources of a Limited Planet*. Leipzig.
- Offermans, Astrid, Heleen Vreugdenhil, et al. (2011). "The Dutch dominant perspective on water". In: *Sixth Dubrovnik Conference on Sustainable Development of Energy, Water and Environment Systems*. Dubrovnik, Croatia, pp. 1–25.
- Wijermans, Nanda (2011a). "Exploring the CROSS Model: the Role of Density in Crowds". In: *The 7th European Social Simulation Association Conference*. Montpellier, France, pp. 1–13.
- Wijermans, Nanda, Marjolijn Haasnoot, and Hans Middelkoop (2011). "Dynamic modeling: social and physical interactions to explore future water management". In: *NCR days 2011: Controlling Dutch Rivers*. Delft, The Netherlands, pp. 58–59.
- Wijermans, Nanda, Heleen Vreugdenhil, et al. (2011). "Introducing social modelling in the water world". In: *The 7th European Social Simulation Association Conference*. Montpellier, France.
- Amblard, Frederic et al. (2010). "Analyzing Social Conflict via Computational Social Simulation: A Review of Approaches". In: *NATO Science for Peace and Security Series - E: Human and Societal Dynamics*. Ed. by K Martinás, D Matika, and A Srbljinovic. IOS press, pp. 126–141. DOI: 10.3233/978-1-60750-653-9-126.
- Geller, Armando and Nanda Wijermans (2008). "'Death to ...!': On opinion dynamics in conflict-torn Afghanistan". In: *The Fifth Conference of the European Social Simulation Association*. Brescia, Italy.
- Wijermans, Nanda, René Jorna, Wander Jager, and Tony van Vliet (2008). "Modelling the dynamics of motivational and situated behaviour". In: *Proceedings of the 2nd World Congress on Social Simulation*. George Mason University. Washington, USA.
- – (2007). "Modelling Crowd dynamics. Influence factors related to the probability of a riot". In: *Proceedings of ESSA'07 the 4th Conference of the European Social Simulation Association*. Toulouse, France.
- – (2006). "Cognitive social agents: a Simulation in the field of crowd behaviour". In: *Beyond the Brain: Embodied, Situated and Distributed Cognition*. Quebec, Canada.