

Curriculum Vitae dr. Natalie van der Wal

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Associate Professor

Department of Multi-Actor Systems
Faculty of Technology, Policy and Management
Delft University of Technology
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(Last updated 9th of May 2022)

EDUCATION

2012 PhD Artificial Intelligence & Psychology, Vrije Universiteit Amsterdam (NL)
2009 M.Sc. Cognitive Science (with honours), Vrije Universiteit Amsterdam (NL)
2007 B.Sc. Cognitive & Neuropsychology, Vrije Universiteit Amsterdam (NL)
2004 M.A. Film & Media Studies, University of Amsterdam (NL)
2003 B.A. Media & Culture Studies, University of Amsterdam (NL)

ADDITIONAL QUALIFICATIONS

2011 University Teacher Qualification (with honours), Vrije Universiteit Amsterdam (NL)

RESEARCH INTERESTS

Socio-technical systems; crowd behaviour; evacuation, energy transition, power system resilience, group decision-making; social influence; risk communication; health & well-being interventions; modelling and simulation; behavioural experiments

ACADEMIC POSITIONS

Delft University of Technology (NL) - World University Ranking Engineering 2022: 21

2020-current Associate Professor, Systems Engineering and Simulation
Tasks: research & university teaching

University of Leeds (UK) –World University Ranking 2022: 127

2018- 2020 EU Marie Skłodowska-Curie Senior Research Fellow, Centre for Decision Research, Leeds University Business School
Tasks: H2020 EU project leader of interdisciplinary decision research improving speed and survival rate of evacuations

2015 Senior Research Fellow, Socio-Technical Centre, Leeds University Business School
Tasks: Project leader determining socio-technical factors in level crossings accidents

Manchester Metropolitan University (UK) - Young University Ranking 2020: 151-200th

2020- 2020 Supervisor MSc students
Tasks: Supervision MSc Crowd Science and creation of online course content

Vrije Universiteit Amsterdam (NL) - World University Ranking 2020: 115

2012-2018 Assistant Professor, Department of Computer Science, Vrije Universiteit, Amsterdam, NL

Curriculum Vitae dr. Natalie van der Wal

- Tasks: H2020 EU WP leader of interdisciplinary, evidence-based research determining: (1) cultural effects on emergency management, and (2) effects of well-being interventions on mental and physical health, teaching and supervising students in social computing and psychology*
- 2009-2012 Ph.D. Student, Department of Computer Science, Vrije Universiteit Amsterdam & CAMS Forcevision, Royal Dutch Navy, NL
Tasks: Interdisciplinary research in decision focused and human-centred computer modelling of group decision making and well-being interventions

OTHER ACADEMIC ROLES

- 2022-2023 Rubicon selection committee, Dutch Research Council NWO
- 2022 Discussion Panellist, 23rd International Workshop on Multi-Agent-Based Simulation (MABS 2022)
- 2021-2022 Task Leader Human Behaviour in Fire IAFSS Working Group
- 2021-2022 External examiner for PhD students from *University of Leeds, Vrije Universiteit Amsterdam, Virginia Tech University, USA*
- 2011-2022 Program Committee member International Conferences (see REVIEWING)
- 2020-2022 Co-manager Twitter account ‘*Evacuation Modelling*’
- 2018-2020 Principal Investigator EU Project *EVACUATION*, *Centre for Decision Research, Leeds University Business School, UK*
- 2015-2017 Work Package Leader EU Project *IMPACT*, dept. Computer Science, *Vrije Universiteit Amsterdam, The Netherlands*
- 2019 Keynote speaker *International Conference on Crowd Science, Manchester, UK*
- 2018-2020 Expert member *NEED* project for roadmap evacuation research, *UK, Canada*; collaboration professionalising laughter therapy, *The Netherlands/UK*
- 2018-2020 Industry Lead linking research with safety practitioners, firemen, police, emergency lighting companies, *University of Leeds, The Netherlands/UK*
- 2017 Keynote speaker *Conference Artificial Intelligence Platform, France*
- 2017 Session Chair *International Conference on Computational Collective Intelligence (ICCCI) 2017, Cyprus, International Conference on Human-Computing Interaction (HCI) 2017, US*
- 2014-2017 Opponent, *Vrije Universiteit Amsterdam, Department of Computer Science, Altaf Hussain Abro PhD Thesis, Rob Duell PhD Thesis, Willem van Willigen, PhD Thesis, The Netherlands*
- 2016 Sponsoring Chair *Benelux Conference on Artificial Intelligence (BNAIC), The Netherlands*
- 2014 Chairwomen teacher committee, *Department of Computer Science, Vrije Universiteit Amsterdam, The Netherlands*
- 2012-2017 Mentor and role model for girls and women in STEM, *VHTO, The Netherlands*.
- 2011-2017 Member of teacher team designing undergraduate and postgraduate curriculums, dept. computer science, *Vrije Universiteit Amsterdam, The Netherlands*
- 2010 Session Chair *International Conference Brain Informatics (BI), Canada*
- 2010-2017 Open day lecturer giving information presentations about undergraduate and postgraduate studies AI, *Vrije Universiteit Amsterdam, The Netherlands*

PEER-REVIEWED PUBLICATIONS (TOTAL: 45, GOOGLE SCHOLAR H-INDEX:15; 1504 CITATIONS)

Notes. Most of my publications from 2012-2018 are in alphabetic order - representing equal contributions -, which was the working strategy we all adopted at the Behavioural Informatics Group. In Computer Science, Conference Proceedings are similar to journal articles.

1. Van Damme, E.R.I., van der Wal, C. N., Hofstede, G.J., Brazier, F.M.T. (2022). The influence of national culture in evacuation response behaviour and time: An agent-based approach. In *International Workshop on Multi-Agents Systems and Agent-Based Simulation*, accepted for publication.
2. van der Wal, C.N., Robinson, M. A., Bruine de Bruin, W., Gwynne, S. (2021). Evacuation Behaviors and Emergency Communications: An Analysis of Real-World Incident Videos. *Safety Science*, 136, 105121.
3. Van der Wal, C.N., Formolo, D., Robinson, M.A., Gwynne, S. (2021). Examining Evacuee Response to Emergency Communications with Agent-based Simulations. *Sustainability: Simulations and Methods for Disaster Risk Reduction in Sustainable Built Environments*,13 (9), 4623.
4. Valinejad, J., Mili, L., van der Wal, C.N., Xu, J. (2021). Environomic-Based Social Demand Response in Cyber-Physical-Social Power Systems. *IEEE Transactions on Circuits and Systems II – Express Briefs*, doi: 10.1109/TCSII.2021.3109850.
5. Valinejad, J, Mili, L, van der Wal, C.N., von Spakovsky, M., Xu, Y. (2021). Multidimensional output-oriented power system resilience based on degraded functionality. Proceedings of the *IEEE Power & Energy Society General Meeting (PESGM) 2021*, accepted for publication.
6. Gwynne, S., Amos, M., Kinateder, M., Benichou, N., Boyce, K., van der Wal, C.N., Ronchi, E. (2020). The future of evacuation drills: Assessing and enhancing evacuee performance. *Safety Science*, 129, 104767.
7. Davis, M., Hughes, H., McKay, A., Robinson, M., van der Wal, C.N. (2019). Ergonomists as designers: Computational modelling and simulation of complex socio-technical systems. *Ergonomics*, 1-14.
8. van der Wal, C.N., & Kok, R.N. (2019). Laughter-inducing therapies: Systematic review and meta-analysis. *Social Science and Medicine*, 232, 473-488.
9. Adrian J, Bode N, Amos M, Baratchi M, Beermann M, Boltes M, Corbetta A, Dezecache G, Drury J, Fu Z, Geraerts R, Gwynne S, Hofinger G, Hunt A, Kanters T, Kneidl A, Konya K, Koster G, Kupper M, Michalareas G, Neville F, Ntontis E, Reicher S, Ronchi E, Schadschneider A, Seyfried A, Shipman A, Sieben A, Spearpoint M, Sullivan GB, Templeton A, Toschi F, van der Wal C, van Schadewijk F, von Kruchten C, Wijermans N, Yucel Z, Zanlungo F, Zuriguel I. (2019) A glossary for research on human crowd dynamics. *Collective Dynamics*, 4, 1-13.
10. Irrmischer, M., van der Wal, C.N., Mansvelder, H.D., Linkenkaer-Hansen, K. (2018). Negative mood and mind wandering increase long-range temporal correlations in attention fluctuations. *PLoS one*. 13(5):e0196907.
11. Chohra, A., Madani, K., & van der Wal, C.N. (2018). Group affect in complex decision-making systems: from psychology to computer science perspectives. In

International Conference on Computational Collective Intelligence (pp. 222-233). Springer, Cham.

12. Formolo, D., Bosse, T., & van der Wal, C.N. (2018). Studying the impact of trained staff on evacuation scenarios by agent-based simulation. In *International Conference on Social Informatics* (pp.85-96). Springer, Cham.
13. Van der Wal, C.N. (2018). Human behaviors during evacuation: ‘Run, hide, and tell’ or ‘run, hide and film’? In *International Conference on Pedestrian Evacuation Dynamics*.
14. Jutte, B., & van der Wal, C.N. (2018). Modelling of emotional contagion in soccer fans. In *Transactions on Computational Collective Intelligence XXX* (pp. 25-53). Springer, Cham.
15. van der Wal, C.N., Formolo, D., Robinson, M.A., Minkov, M., & Bosse, T. (2017). Simulating crowd evacuation with socio-cultural, cognitive, and emotional elements. In *Transactions on Computational Collective Intelligence XXVII* (pp. 139-177). Springer, Cham.
16. Formolo, D., & van der Wal, C.N.. (2017). Simulating Collective Evacuations with Social Elements. In *International Conference on Computational Collective Intelligence* (pp.766-777). Springer, Cham.
BEST PAPER AWARD.
17. Formolo, D., & van der Wal, C.N. (2017). An adaptive simulation tool for evacuation scenarios. In *EPIA Conference of Artificial Intelligence* (pp. 28-40). Springer, Cham.
18. Medeiros, L., & van der Wal, C.N. (2017). An Agent-based model predicting group emotion and misbehaviours in stranded passengers. In *EPIA Conference on Artificial Intelligence* (pp. 620-627). Springer, Cham.
19. van der Wal, C.N., Formolo, D., & Bosse, T. (2017). An agent-based evacuation model with social contagion mechanisms and cultural factors. In *International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems* (pp. 620-627). Springer, Cham.
20. van der Wal, C.N., Couwenberg, M., & Bosse, T. (2017). Getting frustrated: modelling emotion contagion in stranded passengers. In *International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems* (pp. 611-619). Springer, Cham.
21. van der Wal, C.N., Hermans, A., & Bosse, T. (2017). Inducing fear: Cardboard virtual reality and 2D video. In *International Conference on Human-Computer Interaction*, (pp. 711-720). Springer, Cham.
22. Bosse, T., Duell, R., Memon, Zulfiqar. A., Treur, J., van der Wal, C. N. (2016). Computational model-based design of leadership support based on situational leadership theory. *Simulation*. 93(7), 605-617.
23. Jutte, B., & van der Wal, C.N. (2016). Cognitive modelling of emotion contagion in a crowd of soccer supporter agents. In *International Conference on Computational Collective Intelligence* (pp. 40-52). Springer, Cham.
24. van der Wal, C.N., Irrmischer, M. (2015). Measuring emotion regulation with single dry electrode brain computer interface. In *International Conference on Brain Informatics and Health* (pp. 181-191). Springer, Cham.

25. van der Wal, C.N., Irrmischer, M. (2015). Myndplay: Measuring attention regulation with single dry electrode brain computer interface. In *International Conference on Brain Informatics and Health* (pp. 192-201). Springer, Cham.
 26. Bosse, T., Duell, R., Memon, Z., Treur, J., van der Wal, C.N. (2015). Agent-based modelling of emotion contagion in groups. *Cognitive Computation*, 7(1), 111-136.
 27. Middelweerd, A., Mollee, J. S., van der Wal, C. N., Brug, J., & te Velde, S. J. (2014). Apps to promote physical activity among adults: a review and content analysis. *International Journal of Behavioral Nutrition and Physical Activity*, 11(1), 97.
 28. van der Wal, C.N., & Kowalczyk, W. (2013). Detecting changing emotions in human speech by machine and humans. *Applied Intelligence*, 39(4), 675-691.
 29. Mollee, J.S., & van der Wal, C. N. (2013). A computational agent model of influences on physical activity based on the social cognitive theory. In *International Conference on Principles and Practice of Multi-Agent Systems* (pp. 478-485). Springer, Cham.
 30. Aziz, A.A., Treur, J., & van der Wal, C.N. (2012). An Ambient Agent Model for Support of Informal Caregivers During Stress. In *International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems* (pp. 501-513). Springer, Cham.
 31. Boersma, K., Passenier, D., Mollee, J. & van der Wal, C.N. (2012). Crisis management evaluation: Formalisation & analysis of communication during fire incident amsterdam airport train tunnel. In *European Conference on Modelling and Simulation* (pp. 325-331). doi:10.7148/2012
 32. Kowalczyk, W., & van der Wal, C.N. (2012). Detecting changing emotions in natural speech. In *International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems* (pp. 491-500). Springer, Cham.
- BEST PAPER NOMINATION**
33. Bosse, T., Hoogendoorn, M., Klein, M.C.A., Treur, J., van der Wal, C.N., & van Wissen, A. (2012). Modelling collective decision making in groups and crowds: Integrating social contagion and interacting emotions, beliefs and intentions. *Autonomous Agents and Multi-Agent Systems*, 27(1), 52-84.
 34. Hoogendoorn, M., Treur, J, van der Wal, C.N., & van Wissen, A. (2011). Agent-based modelling of the emergence of collective states based on contagion of individual states in groups. In *Transactions on Computational Collective Intelligence III* (pp.152–179).
 35. Aziz, A.A., Treur, J., & van der Wal, C.N. (2011). An agent-based model for integrated contagion and regulation of negative mood. In *International Conference on Principles and Practice of Multi-Agent Systems* (pp. 83-96). Springer, Cham.
 36. Bosse, T., Chandra, V., Mitleton-Kelly, E. & van der Wal, C.N. (2011). Analysis of beliefs of survivors of the 7-7 London bombings: Application of a formal model for contagion of mental states. In *International Conference on Neural Information Processing* (pp. 423-434). Springer, Cham.
 37. Bosse, T., Hoogendoorn, M., Klein, M.C.A., Treur, J., & van der Wal, C.N. (2011). Agent-based analysis of patterns in crowd behaviour involving contagion of mental states. In *International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems* (pp. 566-577). Springer, Cham.

38. Hoogendoorn, M., Treur, J., van der Wal, C.N., & van Wissen, A. (2010). Modelling the interplay of emotions, beliefs and intentions within collective decision making based on insights from social neuroscience. In *International Conference on Neural Information Processing* (pp. 196-206). Springer, Cham.
39. Hoogendoorn, M., Treur, J., van der Wal, C.N., & van Wissen, A. (2010). An agent-based model for the interplay of information and emotion in social diffusion. In *International Joint Conference on Web Intelligence and Intelligent Agent Technology*, (pp. 439-444). IEEE.
40. Hoogendoorn, M., Treur, J., van der Wal, C.N., & van Wissen, A. (2010). Modelling the emergence of group decisions based on mirroring and somatic marking. In *International Conference on Brain Informatics* (pp. 29-41). Springer, Cham.
41. Aziz, A.A., Treur, J., & van der Wal, C.N. (2010). Modelling caregiving interactions during stress. In *International Conference on Brain Informatics* (pp. 263-273). Springer, Cham.
42. Bosse, T., Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. (2009). A multi-agent model for mutual absorption of emotions. In *European Conference on Modelling and Simulation* (pp. 212-218). European Council on Modelling and Simulation.
43. Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. (2009). An ambient agent model for group emotion support. In *International Conference on Affective Computing and Intelligent Interaction* (pp. 550-557). IEEE.
44. Bosse, T., Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. (2009). An ambient agent model for group development support. In *International Joint Conference on Web Intelligence and Intelligent Agent Technology* (Vol 2. pp. 505-510). IEEE.
45. Bosse, T., Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. (2009). A multi-agent model for emotion contagion spirals integrated within a supporting ambient agent model. In *International Conference on Principles of Practice in Multi-Agent Systems* (pp. 48–67). Springer, Cham.

BOOK CHAPTERS, EU PROJECT REPORTS (TOTAL: 9)

1. Van der Wal, C.N., Formolo, D., Medeiros, L., Robinson, M. (2017). *D2.4 – Structured Simulations with the Single Agent Domain Model*. IMPACT Project, report for the European Commission.
2. Van der Wal, C.N., Formolo, D., Robinson, M., Bosse, T. (2017). *D2.3 – Internal and External Validation of the Computational Agent-based Model*. IMPACT Project, report for the European Commission.
3. Van der Wal, C.N., Formolo, D., Medeiros, L., (2017). *D2.2 – Computational Agent-based Crowd Model*. IMPACT Project, report for the European Commission.
4. Van der Wal, C.N., Robinson, M., Cichomska, K., Minkov, M., Dambra, C., Tedeschi, A & Rozzi, S. (2016). *D2.1 – Synthesis of Theoretical Framework and Translation into Conceptual Model*. IMPACT Project, report for the European Commission.
5. Cichomska, K., Robinson, Minkov, M., M. A., Davis, M., Blagoev, V., van der Wal, C.N., Karbownik, A., Sengur, F., Turhan, U., Giuricin, A., Dambra, C., Rozzi, S., Tedeschi, A & Golfetti, A. (2016). *D1.3 – Theoretical Framework of Cross-Cultural and Psycho-Social Crowd Behaviour and Management in Transport Terminals*. IMPACT Project, report for the European Commission.

6. Robinson, M. A., Cichomska, K., Davis, M., Minkov, M., Blagoev, V., van der Wal, C.N., Turhan, U., Karbownik, A., Giuricin, A., Rozzi, S., & Tedeschi, A. (2015). *DI.1 – Review and Critical Analysis of Multi-Cultural Crowd Behaviour in Emergencies*. IMPACT Project, report for the European Commission.
7. Bosse, T., Hoogendoorn, M., Sharpanskykh, A., Treur, J., van der Wal, C.N., van Wissen, A. (2013). *Agent-based Modelling of Social Emotional Decision Making in Emergency Situations*. In: Mitleton-Kelly, E. (ed.), *Co-evolution of Intelligent Socio-technical Systems: Modelling and Applications in Large Scale Emergency and Transport Domains*. Springer, Cham.
8. Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. (2012). *Ambient Support for Group Emotion: an Agent-Based Model*. Chapter in T. Bosse (ed.), *Agent-Based Approaches to Ambient Intelligence*. IOS Press.
9. Van der Wal, C.N. (2012). *Social Agents. Agent-Based Modelling of Integrated Internal and Social Dynamics of Cognitive and Affective Processes*. Ph.D. Thesis.

SELECTED NEWSPAPERS, RESEARCH BLOGS, OTHER MEDIA (TOTAL: 23)

1. Mind over Matter Magazine (2022, May). “[Laugh your Way to Better Health](#)”.
2. Daily Mail, Section Good Health. (2021, November). “Laughter”.
3. Blog Event Safety Institute, The Netherlands. (2021, May), “[New insights in evacuation behaviour, what works when?](#)”.
4. Project Repository Journal. (2020, October), “[Project EVACUATION: Testing communication strategies to save lives in emergency evacuation](#)”.
5. ABC Radio National, Australia, (2020, July), “[Is laughter really the best medicine?](#)” – on my meta-analysis of the effectiveness of laughter therapies
6. Leeds University Business School (2020, May), “[Podcast: Form laughter therapy to testing communication strategies for emergency evacuations](#)”
7. ITV News, United Kingdom. (2020, January). “[Is blue Monday real?](#)” - on predicting emotions and preventing depression.
8. Research Blog Event Safety Institute, The Netherlands. (2019, December). “[Possible solutions to prevent dangerous behaviours during evacuations](#)”.
9. Research Blog Leeds University Business School, UK. (2019, December). “[Possible solutions preventing dangerous evacuation behaviours: Results from interviews with crowd safety experts](#)”
10. Research Blog Leeds University Business School, UK. (2019, August). “[What happens when a researcher attends a conference?](#)”
11. Research Blog Leeds University Business School, UK. (2019, May). “[Learning about evacuations and crowds](#)”
12. Dutch Magazine Safety and Prevention (‘Veiligheid en Preventie’), The Netherlands. (2019, February). “[Evacuating in case of a fire](#)”
13. Network Magazine Leeds University Business School, UK. (2019, February). “[In Case of Emergency...](#)”
14. Online Magazine ‘Vive+’, The Netherlands. (2019, January): “[Laughter really is healthy](#)”
15. Magazine & Online Platform Fire safety (‘Brandveilig.com’), The Netherlands. (2018, December). “[Evacuation Behaviours: do’s and don’ts](#)”
16. Magazine & Online Platform Fire safety (‘Brandveilig.com’), The Netherlands. (2018, May). “[Social and Cultural Factors in Evacuation Simulations](#)”

17. Dutch Newspaper 'De Volkskrant', The Netherlands. (2017, November). '[An evacuation model that takes human behaviour into account](#)'
18. Live interview Bloomberg TV, Bulgaria. (2017, November). '[The role of culture in emergency prevention and management](#)'
19. Dutch Magazine Laughter Magazine ('Lach!Magazine'), The Netherlands. (2015, January). '[Serious laughter: Scientific research of laughter](#)'.
20. Dutch Newspaper 'de Volkskrant', column True Science ("Ware Wetenschap"), The Netherlands. (2014, September). "[Ware Wetenschap](#)".
21. Dutch Newspaper 'de Volkskrant' column True Science ("Ware Wetenschap"), The Netherlands. (2013, April & May). "[Ware Wetenschap](#)".
22. Dutch Radio BNR and Radio 5, The Netherlands. (2012, May). "[Radio-interviews about my group decision-making research.](#)"
23. Dutch magazine and internet platform 'Quest', The Netherlands. (2011, May). "[Piece on my affective computing research.](#)"

PEER-REVIEWED PRESENTATIONS AT SCIENTIFIC MEETINGS (TOTAL: 24)

1. August 2019, Van der Wal, C.N., Robinson, M.A., Bruine de Bruin, W., Gwynne, S. *Risky Behaviors and Risk Communications in Real-World Incidents: Video Analysis*. Paper presented at Subjective Probability, Utility and Decision-Making (SPUDM), Amsterdam, NL.
2. September 2018. Chohra, A., Madani, K., & van der Wal, C.N. *Group affect in complex decision-making systems: from psychology to computer science perspectives*. Paper presented at the International Conference on Computational Collective Intelligence (ICCCI), Bristol, UK.
3. September 2018. Formolo, D., Bosse, T., & van der Wal, C.N. *Studying the impact of trained staff on evacuation scenarios by agent-based simulation*. Paper and poster presented at International Conference on Social Informatics(SOC-INFO), Saint Petersburg, Russia.

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4. August 2018. Van der Wal, C.. Human behaviors during evacuation: 'Run, hide, and tell' or 'run, hide and film'? Paper presented at the International Conference on Pedestrian and Evacuation Dynamics, Lund, Sweden.
5. December 2017, van der Wal, C.N., Formolo, D., Robinson, M.A., Minkov, M., & Bosse, T. *Simulating crowd evacuation with socio-cultural, cognitive, and emotional elements*. Paper presented at the European Conference on Multi-Agent Systems (EUMAS), Évry, France.
6. September 2017, Formolo, D., & van der Wal, C.N. (2017). *Simulating Collective Evacuations with Social Elements*. Paper presented at the International Conference on Computational Collective Intelligence (ICCCI), Nicosia, Cyprus.

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7. September 2017 Formolo, D., & van der Wal, C.N. *An adaptive simulation tool for evacuation scenarios*, Medeiros, L., & van der Wal, C.N. *An Agent-based model predicting group emotion and misbehaviours in stranded passengers*. Papers presented at the EPIA Conference of Artificial Intelligence, Porto, Portugal.
8. June 2017, van der Wal, C.N. Formolo, D., & Bosse, T. (2017). *An agent-based evacuation model with social contagion mechanisms and cultural factors* & van der Wal, C.N. Couwenberg, M., & Bosse, T. *Getting frustrated: modelling emotion contagion in stranded passengers*. Papers presented at the International Conference on

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- Industrial, Engineering and other Applications of Applied Intelligent Systems, (IEA/AIE), Arras, France.
9. July 2017, van der Wal, C.N., Hermans, A., & Bosse, T. *Inducing fear: Cardboard virtual reality and 2D video*. Paper presented at the International Conference on Human-Computer Interaction (HCI), Vancouver, Canada.
 10. September 2016, Jutte, B., & van der Wal, C.N. (2016). *Cognitive modelling of emotion contagion in a crowd of soccer supporter agents*. Papers presented at the In International Conference on Computational Collective Intelligence (ICCCI), Halkdiki, Greece
 11. August 2015, van der Wal, C.N., Irmischer, M. (2015). *Myndplay: Measuring attention regulation with single dry electrode brain computer interface & Measuring emotion regulation with single dry electrode brain computer interface*. Papers presented at the International Conference on Brain Informatics and Health (BIH), London, UK.
 12. December 2013. Mollee, J.S., & van der Wal, C. N. *A computational agent model of influences on physical activity based on the social cognitive theory*. Paper presented at International Conference on Principles and Practice of Multi-Agent Systems (PRIMA), Dunedin, New Zealand.
 13. June 2012. Kowalczyk, W., & van der Wal, C.N. (2012). Detecting changing emotions in natural speech, Aziz, A.A., Treur, J., & van der Wal, C.N. *An Ambient Agent Model for Support of Informal Caregivers During Stress*. Papers presented at International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IEA/AIE), Dailan, China.
BEST PAPER NOMINATION.
 14. May 2012. Boersma, K, Passenier, D., Mollee, J. & van der Wal, C.N. *Crisis management evaluation: Formalisation & analysis of communication during fire incident amsterdam airport train tunnel*. Paper presented at the European Conference on Modelling and Simulation (ECMS), Koblenz, Germany.
 15. November 2011. Aziz, A.A., Treur, J., & van der Wal, C.N. *An agent-based model for integrated contagion and regulation of negative mood*. Paper presented at the International Conference on Principles and Practice of Multi-Agent Systems (PRIMA), Wollongong, Australia.
 16. November 2011, Bosse, T., Chandra, V., Mitleton-Kelly, E. & van der Wal, C.N. *Analysis of beliefs of survivors of the 7-7 london bombings: Application of a formal model for contagion of mental states*. Paper presented at the International Conference on Neural Information Processing (ICONIP), Sydney, Australia.
 17. June 2011. Bosse, T., Hoogendoorn, M., Klein, M.C.A., Treur, J., & van der Wal, C.N. (2011). *Agent-based analysis of patterns in crowd behaviour involving contagion of mental states*. Paper presented at the International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE), Syracuse, US.
 18. November 2010. Hoogendoorn, M., Treur, J., van der Wal, C.N., & van Wissen, A. (2010). *Modelling the emergence of group decisions based on mirroring and somatic marking*. Paper presented at the International Conference on Neural Information Processing (ICONIP), Sydney, Australia.
 19. August 2010, Hoogendoorn, M., Treur, J., van der Wal, C.N., & van Wissen, A. *Modelling the emergence of group decisions based on mirroring and somatic marking*, Aziz, A.A., Treur, J., & van der Wal, C.N. (2010). *Modelling caregiving interactions during stress*. Papers presented at the International Conference on Brain Informatics (BI), Toronto, Canada.

20. September 2010. Hoogendoorn, M., Treur, J., van der Wal, C.N., & van Wissen, A. (2010). An agent-based model for the interplay of information and emotion in social diffusion. Paper presented at the International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT), Toronto, Canada.
21. September 2009, Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. *An ambient agent model for group emotion support*. Paper presented at the International Conference on Affective Computing and Intelligent Interaction (ACII), Amsterdam, NL.
22. September 2009, Bosse, T., Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. *An ambient agent model for group development support*. Paper presented at the International Conference on Intelligent Agent Technology (IAT), Milan, Italy.
23. June 2009. Bosse, T., Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. *A multi-agent model for mutual absorption of emotions*. Paper presented at the European Conference on Modelling and Simulation (ECMS), Madrid, Spain.
24. December 2009. Bosse, T., Duell, R., Memon, Z.A., Treur, J., & van der Wal, C.N. *A multi-agent model for emotion contagion spirals integrated within a supporting ambient agent model*. Paper presented at the International Conference on Principles of Practice in Multi-Agent Systems (PRIMA), Nagoya, Japan.

INVITED PRESENTATIONS (TOTAL: 37)

1. ‘*Crowd behaviour and effective emergency communication*’, Event Safety Institute, ‘Fire Brigades Midden and West Brabant, 07-06-2021, The Netherlands
2. ‘*Effective emergency communication*’, TPM live on Stage event, Delft University of Technology, The Netherlands, 08-04-2021
3. ‘*Modelling social identity in stranded or evacuating passengers*’, Social Simulation Fest 2021, online meeting European Social Simulation Association, 19-03-2021
4. ‘*Effective emergency communication: accounting for human evacuation behaviours*’, First Aid and Fire Safety Organisation Delft University of Technology, The Netherlands, 09-03-2021
5. ‘*Workshop emergency communication at events*’, Event Safety Institute Congress, Hoofddorp, The Netherlands, 19-11-2020
6. ‘*Agent-based modelling for policy*’, Agent-Based Modelling Workshop for Policy, London, UK, 05-10-2020
7. ‘*Leading and managing interdisciplinary teams*’, Research Conference Chartered Association of Business Schools, Nottingham, UK, 18-03-2020
8. ‘*My experiences as an International Research Fellow*’, National Inclusion Week, University of Leeds, UK, 25-9-2019.
9. ‘*Evacuation behaviours and communications*’, Keynote lecture at International Conference on Crowd Science, Manchester Metropolitan University, UK, 11-9-2019.
10. ‘*Is laughter the best medicine?*’, Research Seminar, Leeds University Business School, UK, 11-6-2019.
11. ‘*How to write a grant proposal*’, Marie Curie Individual Fellowship Event, University of Leeds, UK, 16-5-2019.
12. ‘*Evacuation research: Learning about evacuations and crowds*’, Be Curious Festival, University of Leeds, UK, 30-3-2019.
13. ‘*Developing a roadmap for evidence-based egress drills*’, Ottawa, Northumbria, London, CAN, UK, 12-6-2018-30-4-2019.
14. ‘*Modelling and Simulation of Social Evacuations*’, workshop on pedestrian dynamics, University of Warwick, UK, 25-02-2019.

15. *'Risky Decisions and Risk Communication in Emergency Situations'*, Centre for Decision Research Seminar, University of Leeds, UK, 06-02-2019.
16. *Participated in workshop 'Physics and Psychology of Human Crowd Dynamics'*, University of Leiden, NL, 05-11-2018-09-11-2018.
17. *'How to write a grant proposal'*, UK Research Office Marie Curie Individual Fellowship Event, University of Leeds, UK, 16-5-2018.
18. *'Technologies for Crowd Monitoring'*, N8 Policing Research Partnership, Leeds University Business School, UK, 16-5-2018.
19. *'Modelling Crowd Behaviour'* at University of Amsterdam, Netherlands, 21-11-2017.
20. *'Modelling Group Decision in Evacuating Crowds'* in Public Transport, Seminar Group Decision Making, WSB University, Wroclaw (Poland), 24/11/2017.
21. *'Simulating Socio-Cultural Crowd Behaviour in Emergency Situations'*, Keynote at International Conference Platform Artificial Intelligence (PFIA2017), Caen, 6-7-2017.
22. *'Modelling Cultural Effects on Group Decisions in Emergency Situations in Public Transport'*, Seminar Group Decision Making, WSB University, Wroclaw (Poland), 25/11/2016.
23. *'Modelling Crowds: Crowd Models and Experiments'* at University of Amsterdam, Netherlands, 09-12-2016.
24. *'Scientific Laughter: Research on the Effects of laughter'* at Amsterdam Laughter Conference, Netherlands, 13-11-2016.
25. *'Social Simulations'*, Research Seminar, Centre for Decision Research, University of Leeds, UK, 23-09-2015.
26. *'Integrating socio-psychological theories in agent-based models of emergency situations in transport'*. EAWOP, Small Group Meeting, Verona (Italy), 15/09/2016.
27. *'Studying Laughter: Laughter Yoga in Scientific Research'*, International Laughter Yoga Congress, Paris (France), 06-03-2015.
28. *'Studying Laughter: Laughter Yoga in Scientific Research'*, National Laughter Yoga Congress, Lisse, Netherlands, 24-01-2015.
29. *'Emotional Contagion in Groups & Social Networks'*, BMS-ANed, Scientific Biometric Association, Wageningen University, (Netherlands), 17-12-2014.
30. *'Leading Ladies in ICT'*, VHTO & NWO Networking Conference, Amsterdam (Netherlands), 24-11-2014.
31. *'AI-applications: Agent-based modelling for a Healthy Lifestyle'*, Centre for Neurogenomics and Cognitive Research, Amsterdam, 13-1-2014.
32. *"'Showcase: Crowd Modelling and Emotion Recognition from Speech'"* at 'BrainStorm', VU University, 11-03-2013.
33. *'AI Applications: Human Ambience Research'*, Centre for Neurogenomics and Cognitive Research, Amsterdam, 14-1-2013.
34. *'Agent-based Modelling of Social Group Dynamics'*, Centre for Neurogenomics and Cognitive Research, Amsterdam, 24-1-12.
35. *'Agent-based Modelling of Emotion Contagion'*, Centre for Neurogenomics and Cognitive Research, Amsterdam, 14-1-2011.
36. *'Human Ambience Research and Applications'* at Hogeschool van Amsterdam, 04-10-2011.
37. *'Agent-based Modelling of Crowds Spreading Beliefs, Intentions and Emotions'*, Centre for Neurogenomics and Cognitive Research, Amsterdam, 14-1-2010.

RESEARCH PROJECTS & GRANTS

Active Projects/Grants:

Safety & Security Institute Delft University of Technology (internal grant)

Role: PI, Dates: 12-12-2020-12-12-2022

Grant (€ 10,000)

Title: TU Delft Evacuation Performance: Standardising Assessment

UKRI Future Leaders Fellowship

Role: external collaborator, Dates: 01-12-2021-01-12-2026

In-kind contribution (1 month fte)

Title: Simulating the impact of first responder communication strategies on citizen adherence in emergencies

Past Projects/Grants:

Valorisation Centre Delft University of Technology (internal grant)

Role: PI, Dates: 01-04-2021-31-12-2021

Grant (€ 35,000)

Title: Pilot Study: Risk Communication for Safe University Education during Covid

Safety & Security Institute Delft University of Technology (internal grant)

Role: PI, Dates: 26-11-2020-26-11-2021

Grant (€ 11,000)

Title: Group decision making during evacuations

European Commission (European grant, Horizon 2020 Framework, Marie Skłodowska-Curie Individual Fellowship)

Role: PI, Dates: 01-03-2018-04-07-2020

Grant 748647 (€ 195,455)

Title: Testing communication strategies to save lives in emergency evacuation

European Commission (European grant, Horizon 2020 Framework, Coordination and Support Action)

Role: Co-PI and WP leader, Dates: 01-05-2015-01-10-2017

Grant 653383 (€ 1,398,912 / € 218,025)

Title: Impact of cultural aspects in the management of emergencies in public transport

Leeds University Business School (internal grant)

Role: Senior Research Fellow, Dates: February 2019 & May 2018

Publication Scheme Grants (£2500 & £800)

NWO, National Science Organisation, the Netherlands (national grant)

Role: Sponsoring Chair BNAIC 2016, Date: January 2017

NWO Open Access Funding (€ 2,500)

NWO, National Science Organisation, the Netherlands (national grant)

Role: Sponsoring Chair BNAIC 2016, Date: January 2017

NWO Foreign Expert Funding (€ 2,250)

Industry partners (national industry partners)

Role: Sponsoring Chair BNAIC 2016, Date: December 2016

Funding from Industry Partners (€ 12,500)

Van Coeverden Adriani Foundation, The Netherlands (national grant)

Role: PhD graduate, Date: May 2012

Title: Postdoc Travel Grant (€ 5,000)

TEACHING

System Modelling

Delft University of Technology: undergraduate level

Role: Lead-teacher

Year: 2022 (N=170)

Agent-Based Modelling

Delft University of Technology: postgraduate level

Role: co-teacher

Year: 2020 (N=157), 2021 (N=200)

Social and Work Psychology

Vrije Universiteit Amsterdam: undergraduate level

Role: Lead-teacher & course creator

Year: 2014 (N=55), 2015 (N=68), 2016 (N=100), 2017 (N=45)

Project Lifestyle Informatics

Vrije Universiteit Amsterdam: undergraduate level

Role: Lead-teacher & partial creator of course

Year: 2011 (N=45), 2012 (N=55)

Human Ambient Intelligence

Vrije Universiteit Amsterdam: postgraduate level

Role: Lead-teacher

Year 2012 (N=12), 2013, (N=15)

Multiple Courses

Vrije Universiteit Amsterdam: undergraduate & postgraduate level

Role: Guest lecturer or co-teacher

Courses: Project Artificial Intelligence (2010, undergraduate), Academic English (2014, 2015, 2016, undergraduate), Introduction Lifestyle Informatics (2011, 2012, 2013, 2014, undergraduate), Introduction Modelling and Simulation (2011, undergraduate), Human Ambience Intelligence (2011, postgraduate), Behavioural Dynamics (2010, undergraduate).

PHD STUDENT SUPERVISION

Supervision

Delft University of Technology, dept. Systems Engineering and Simulation

2021-current: Erica Kinkel (co-Promotor, in collaboration with *dept. Transport. & Planning, Faculty Civil Engineering and Geosciences*)

2021-2022: Benbu Liang (co-Supervisor, in collaboration with Wuhan University of Technology, China)

Vrije Universiteit Amsterdam, dept. Computer Science:

2015-2017: Daniel Formolo (co-Supervisor, Project IMPACT)

2015:2017: Lenin Medeiros (co-Supervisor, Project IMPACT)

2012-2014: Julienka Mollee (co-Supervisor, Project Active2Gether)

External PhD exam committee memberships

2019-2022: Jaber Valinejad, Virginia Tech, College of Engineering, Bradely Department of Electrical and Computer Engineering

2022: Fakhra Jabeen, Dept. of Computer Science, Vrije Universiteit Amsterdam

2021: Alessandro Zonta, Dept. of Computer Science, Vrije Universiteit Amsterdam

2021: Jose Ignacio Barrera, University of Leeds

Opponent PhD defence

2016: Altaf Hussain Abro, Dept. of Computer Science, Vrije Unviersiteit Amsterdam

2016: Rob Duell, Dept. of Computer Science, Vrije Unviersiteit Amsterdam

2016: Willem van Willigen, Dept. of Computer Science, Vrije Unviersiteit Amsterdam

STUDENT SUPERVISION

Note. *These are graduation projects for which I was the main supervisor. I have also been a second examiner for other projects.*

Delft University of Technology, Faculty of Technology, Policy and Management:

Floris Boendermakers (M.Sc. Engineering and Policy Analysis 2021-2022)

Jakob Irnich (M.Sc. Complex Systems Engineering and Management 2021-2022)

Kylian Knetemann (M.Sc. Engineering and Policy Analysis 2020-2021)

Marceau Mertens (M.Sc. Engineering and Policy Analysis 2020-2021)

Elvira van Damme (M.Sc. Engineering and Policy Analysis 2020-2021)

Samuel Timmers (M.Sc. Engineering and Policy Analysis 2020-2021)

Manchester Metropolitan University, dept. Event Management:

Eric Kant (M.Sc. Crowd Science 2019-2020)

Sjors Duquesnoy (M.Sc. Crowd Science 2019-2020)

Marc Tubee (M.Sc. Crowd Science 2019-2020)

Liora Navon (M.Sc. Crowd Science 2019-2020)

Vrije Universiteit Amsterdam, dept. Computer Science:

Mylene van der Koogh (M.Sc. Artificial Intelligence 2016-17)

Niels Korts (M.Sc. Artificial Intelligence 2017)

Jeroen Heijstek (B.Sc. Lifestyle Informatics 2017)

Liesbeth de Vink (B.Sc. Lifestyle Informatics 2017)

Evelien Hak (B.Sc. Lifestyle Informatics 2017)

Curriculum Vitae dr. Natalie van der Wal

Marleen Kouwenhoven (B.Sc. Lifestyle Informatics 2017)
Maik Couwenberg (M.Sc. Cognitive Science 2016)
Anne van Gorkom (B.Sc. Lifestyle Informatics, 2014)
Elmar Moerman (B.Sc. Lifestyle Informatics, 2014)
Fleur Venneker (B.Sc. Lifestyle Informatics, 2014)
Imane Halhout (B.Sc. Lifestyle Informatics, 2014)
Mylene van der Koogh (B.Sc. Lifestyle Informatics, 2014)
Roxanne Robijns (B.Sc. Lifestyle Informatics, 2013)
Ayesha van der Woensel (B.Sc. Lifestyle Informatics, 2013)
Ali Moussi (B.Sc. Lifestyle Informatics, 2013)
Hannah Boomsma (B.Sc. Lifestyle Informatics 2013)
Julienka Mollee (M.Sc. Artificial Intelligence, 2012)
Jan-Willem Boon (M.Sc. Artificial Intelligence, 2012)

Vrije Universiteit Amsterdam, dept. Clinical Psychology

Marleen Olthof (M.Sc. Clinical Psychology, 2015)
Michelle Spaan (M.Sc. Clinical Psychology, 2015)
Heleen van Os (M.Sc. Clinical Psychology, 2012)
Priscilla in 't Hout (M.Sc. Clinical Psychology, 2012)

Vrije Universiteit Amsterdam, dept. Neuroscience

Berend Jutte (M.Sc. Basic & Applied Neuroscience, 2015-2016)
Dashiel Abrahams (B.Sc. Biomedical Science, 2014)

HONOURS AND AWARDS (TOTAL: 5)

1. Keynote speaker. *International Crowd Science Conference*, Manchester Metropolitan University, UK, 11 September 2019.
2. Best paper award. Formolo, D., & van der Wal, C.N.. (2017). *Simulating Collective Evacuations with Social Elements*. International Conference on Computational Collective Intelligence (ICCCI), September 2017, Nicosia, Cyprus.
3. Keynote speaker. *Conference Artificial Intelligence Platform*, 6 July 2017, Caen, France
4. Best poster award. Formolo, D., Bosse, T., & van der Wal, C.N. (2018). Studying the impact of trained staff on evacuation scenarios by agent-based simulation. *International Conference on Social Informatics (SOC-INFO)*, September 2018, Saint Petersburg, Russia.
5. Best paper nomination. Kowalczyk, W., & van der Wal, C.N. (2012). Detecting changing emotions in natural speech. *International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IAE/AIE)*, June 2012, Dalian, China.

PROFESSIONAL MEMBERSHIPS

European Association of Decision Making (EADM)
European Social Simulation Association (ESSA)

REVIEWING

Program Committees Conferences

Curriculum Vitae dr. Natalie van der Wal

21st International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2022, 22nd International Workshop on Multi-Agent-Based Simulation (MABS) 2021, 20th International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2021, 12th International Conference on Computational Collective Intelligence (ICCCI) 2020, IEEE International Conference on Artificial Intelligence and Virtual Reality (IEEE AIVR) 2020, 21st International Workshop on Multi-Agent-Based Simulation (MABS) 2020, 11th International Conference on Computational Collective Intelligence (ICCCI) 2019, 20th International Workshop on Multi-Agent-Based Simulation (MABS) 2019, 41th Annual Meeting of the Cognitive Science Society (CogSci) 2019, 19th International Workshop on Multi-Agent-Based Simulation (MABS) 2018, 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS2018), 40th Annual Meeting of the Cognitive Science Society (CogSci) 2018, 10th Asian Conference on Intelligent Information and Database Systems (ACIIDS) 2018, 29th Benelux Conference on Artificial Intelligence (BNAIC) 2017, 39th Annual Meeting of the Cognitive Science Society (CogSci) 2017, 28th Benelux Conference on Artificial Intelligence (BNAIC) 2016, 38th Annual Meeting of the Cognitive Science Society (CogSci) 2016, EuroAsianPacific Joint Conference on Cognitive Science (EAPCogSci) 2015, 37th Annual Meeting of the Cognitive Science Society (CogSci) 2015, 16th International Workshop on Multi-Agent-Based Simulation (MABS) 2015, 3rd ASE International Conference on Social Informatics (SocInfo) 2014, 36th Annual Meeting of the Cognitive Science Society (CogSci) 2014, 4th Brazilian Workshop on Social Simulation (BWSS) 2012, 3rd International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH) 2013, 7th International Symposium on INnovations in Intelligent SysTems and Applications (INISTA) 2013, International Conference on Active Media Technology (AMT) 2013, 35th Annual Meeting of the Cognitive Science Society (CogSci) 2013, 26th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, (IEA/AIE) 2013, 2nd International Conference on Social Eco-Informatics (SOTICS) 2012, 24th Benelux Conference on Artificial Intelligence (BNAIC) 2012, 26th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems, (IEA/AIE) 2013, Active Media Technology (AMT'12) 2012, 3rd Brazilian Workshop on Social Simulation (BWSS) 2012, International Symposium on Innovations in Intelligent Systems and Applications (INISTA) 2012, 1st Workshop on Rights and Duties of Autonomous Agents at the European Conference on Artificial Intelligence (ECAI) 2012, International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IAE-AIE) 2012, 13th International Workshop on Multi-Agent-Based Simulation (MABS) 2012, 2nd International Conference on Simulation and Modelling Methodologies, Technologies and Applications (SIMULTECH) 2012, IEEE World Congress on Computational Intelligence (WCCI) 2012, Special Session in Social Network Analysis and Mining, 6th IEEE International Workshop on Engineering Semantic Agent Systems (ESAS) 2012, International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems (IAE-AIE) 2011, Social Simulation and Modelling Track at the Portuguese AI Conference (EPIA) 2011

Journals

Safety Science, Fire and Materials, Applied Sciences, International Journal of Disaster Risk Reduction, Algorithms, Simulation Modelling Practice and Theory, Technology and Society Magazine, Complex Adaptive Systems Modelling, Advances in Systems Science and Applications, Computers & Graphics, Entertainment Computing, Vietnam Journal of Computer Science, Knowledge Based Systems

Funding Organisations

Swiss National Science Foundation, UK Research and Innovation