



UvA-DARE (Digital Academic Repository)

Computational models of emergent organisation in conflict environments

van der Zwet, K.

Publication date
2023

[Link to publication](#)

Citation for published version (APA):

van der Zwet, K. (2023). *Computational models of emergent organisation in conflict environments*. [Thesis, fully internal, Universiteit van Amsterdam].

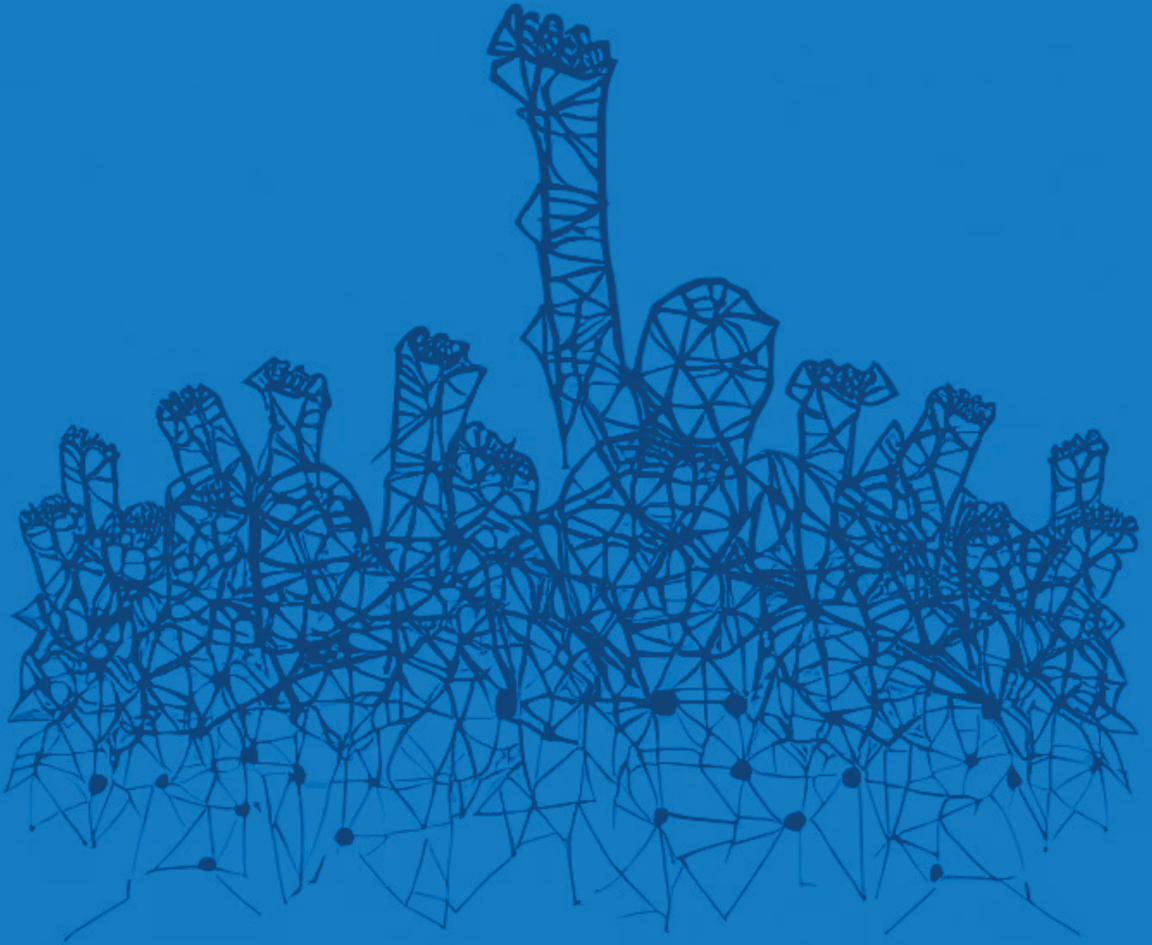
General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

Computational models of emergent organisation in conflict environments



Koen van der Zwet

Computational models of emergent organisation in conflict environments

KOEN VAN DER ZWET

Computational models of emergent organisation in conflict environments



Ministry of Defence

This PhD research was sponsored by TNO under a grant of the Netherlands Ministry of Defense, in cooperation with Computational Science Lab at the University of Amsterdam.



UNIVERSITY OF AMSTERDAM

© Koen van der Zwet

All rights reserved. No parts of this thesis may be reproduced, reported or transmitted, in any form or by any means, without permission of the author.

ISBN 978-94-6473-181-1

Computational models of emergent organisation in conflict environments

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
prof. dr. ir. P.P.C.C. Verbeek

ten overstaan van een door het College voor Promoties ingestelde commissie,
in het openbaar te verdedigen in de Agnietenkapel
op woensdag 4 oktober 2023, te 13:00 uur

door

KOEN VAN DER ZWET

geboren te Haarlem

Promotiecommissie

Promotor: prof. dr. P.M.A. Sloot Universiteit van Amsterdam
 prof. dr. T.M. van Engers Universiteit van Amsterdam

Co-promotor: dr. A.I. Barros TNO

Overige leden: prof. dr. F.P. Pijpers Universiteit van Amsterdam
 prof. dr. mr. M.E. de Meijer Universiteit van Amsterdam
 prof. A.S. Hassoldt TU Delft
 dr. V.V. Vasconcelos Universiteit van Amsterdam
 dr. ir. R.H.A. Lindelauf NLDA

Faculteit der Natuurwetenschappen, Wiskunde en Informatica

Contents

1	INTRODUCTION	3
2	PROMISES AND PITFALLS	13
3	EMERGENCE OF PROTESTS DURING THE COVID-19 PANDEMIC	43
4	AN ABM FOR EMERGENT INSURGENT BEHAVIOUR	65
5	OPPORTUNISTIC ORGANISATION OF ILLICIT SUPPLY CHAINS	81
6	CONCLUSION	111
	REFERENCES	122
	APPENDIX A APPENDIX TO CHAPTER 2	139
	APPENDIX B APPENDIX TO CHAPTER 3	145
	APPENDIX C APPENDIX TO CHAPTER 4	155
	SUMMARY	182
	SAMENVATTING	186
	DANKWOORD	192
	PUBLICATIONS	194