

# VU Research Portal

## Agent-based support for behavior change

van Wissen, A.

2014

### **document version**

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

### **citation for published version (APA)**

van Wissen, A. (2014). *Agent-based support for behavior change: Models and applications in health and safety domains*. [PhD-Thesis - Research and graduation internal, Vrije Universiteit Amsterdam].

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

### **Take down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

### **E-mail address:**

[vuresearchportal.ub@vu.nl](mailto:vuresearchportal.ub@vu.nl)

# Contents

<b>I Introduction</b>	<b>1</b>
1 Introduction	3
<b>II Models &amp; Simulations</b>	<b>25</b>
2 A Computational Model for Therapy Adherence and Behavior Change	27
3 A Computational Model of Habit Learning to Enable Ambient Support for Lifestyle Change	39
4 Agent-Based Modeling of the Emergence of Collective States Based on Contagion of Individual States in Groups	53
5 Contagion of Habitual Behavior in Social Networks: an Agent-Based Model	77
6 A Computational Analysis of Emotions and Social Influence in Learning	95
7 Analysis and Support of Lifestyle via Emotions Using Social Media	123
<b>III Empirical Validations</b>	<b>139</b>
8 Intelligent Mobile Support for Therapy Adherence and Behavior Change	141
9 Autonomous e-Coaching in the Wild: Empirical Validation of a Model-Based Reasoning System	159
10 Human Involvement in e-Coaching: Effects on Effectiveness, Perceived Influence and Trust	175
11 Modeling Collective Decision Making in Groups and Crowds: Integrating Social Contagion and Interacting Emotions, Beliefs and Intentions	193
12 Human-Agent Teamwork in Dynamic Environments	225
<b>IV Discussion &amp; Conclusion</b>	<b>247</b>
13 Discussion & Conclusion	249
Appendix A	265
Affiliation of Co-authors	269
Summary	271
Samenvatting	273
Curriculum Vitae	277
SIKS List of Dissertations	279