# Table of Contents

Acknowledgements .............................................................................................................. 9
English Summary ............................................................................................................... 11
Nederlandse Samenvatting ...................................................................................................... 15

Introduction .................................................................................................................. 21
Perspectives on design: from craft to liberal art ................................................................. 25
  What is design? ................................................................................................................ 30
How to resume the task of exploring designing without a product ..................................... 31
  Research aim .................................................................................................................. 35
  Research objectives ....................................................................................................... 35
  Research questions ......................................................................................................... 36
Theoretical contributions and practical relevance ............................................................... 39
Composition of the thesis ................................................................................................. 41

Exploring Design Controversies: An Actor Network Theory Inspired Methodology for Studying Design ............................................................................................................ 43
  Research setting: the Amsterdam Museum project .......................................................... 45
    The object of design in designing without a product and its ontology ......................... 48
  How to feed off design controversies: An ANT methodology ............................................ 49
  The research strategy: from ethnography to exploring controversies ............................. 51
    What is in a controversy? ............................................................................................ 53
  The research methods employed in tracing controversies .............................................. 54
    Observations ............................................................................................................... 55
    Reflective interviews ................................................................................................. 57
    Document analysis and literature study ..................................................................... 58
  From empirical insights to theoretical concepts .............................................................. 58
  Closing remarks ............................................................................................................. 61

First Controversy: Beyond Problem Solving – Advancing Constitutive Entanglements ...... 63
  Design problems and wicked entanglements .................................................................. 65
    Not a design problem, but a constitutive entanglement ............................................... 65
Not ill-structured, but wicked ................................................................. 69
Designing as advancing constitutive entanglements ................................... 75
Designing for emergence ........................................................................ 76
Designers’ ways to keep things open and foster advancements ......................... 78
Conclusions ....................................................................................... 82

Second Controversy: Beyond Design Thinking - Design Taste Making ......... 85
Design thinking and its discontent: calculation, imagination, appraisal ............ 88
Design thinking and professional designers ................................................. 88
Design taste making and amateur designers ................................................. 90
Thinking (through) styles, constituting identities ........................................ 94
Refining practices and practitioners through taste making ............................ 99
Conclusions ....................................................................................... 103

Third Controversy: Beyond Design Process – Practicing Designing ............. 105
On scientific design methods and methods-in-practice .................................. 108
The systematic process and methods for designing (online) technologies .......... 108
The emerging practice and methods-in-practice in designing for online interaction 111
Controlling the process, arranging the practice .......................................... 116
The design process as control process, a process of control, a social process .... 116
Not controlling the process, but arranging the practice .................................. 119
Responsibility as accountability, responsibility as caring ............................ 123
Conclusions ....................................................................................... 127

Fourth Controversy: Beyond Design by Drawing – Design by Drawing Together .... 129
Designers’ different ways of relating to the world ....................................... 132
The world viewed as a collection of matters of fact ..................................... 132
The world as a collection of matters of concern ......................................... 135
The acts of designing ............................................................................ 140
Design by drawing ................................................................................ 140
Design by drawing things together ............................................................. 143
Making a product work; making an assemblage work ................................... 146
Conclusions ....................................................................................... 149