dandelon.com
© 2008 AGI-Information Management Consultants
May be used for personal purposes only or by
libraries associated to dandelon.com network.

Stefan Napel

# Bilateral Bargaining

## Theory and Applications

Springer

# Contents

**Introduction** ..... 1

**1. Essentials of Bargaining Theory** ..... 5
1.1 Early Formalizations and Models ..... 6
1.2 Cooperative Solutions ..... 10
1.2.1 The Nash Bargaining Solution ..... 11
1.2.2 Alternative Solutions ..... 22
1.3 Non-cooperative Models ..... 25
1.3.1 Games with Finite Horizon ..... 26
1.3.2 Rubinstein's Alternating Offers Model ..... 30
1.3.3 Strategic Bargaining with Incomplete Information ..... 44
1.4 Evolutionary Models ..... 49
1.4.1 Adaptive Play ..... 51
1.4.2 Replicator Dynamics and the Ultimatum Minigame ..... 60
1.4.3 Bargaining Automata ..... 67
1.5 Empirical Evidence and Discussion ..... 73

**2. Aspiration-based Bargaining** ..... 81
2.1 Related Literature ..... 82
2.2 The Model ..... 84
2.3 Theoretical Results ..... 88
2.4 Simulation Results ..... 91
2.5 Concluding Remarks ..... 96
2.6 Proofs ..... 98

**3. Bilateral Bargaining and Decision Power** ..... 109
3.1 Power Indices ..... 110
3.2 Inferior Players ..... 115
3.3 The Strict Power Index ..... 117
3.4 Inferior Players in a Probabilistic Setting ..... 121
3.5 Concluding Remarks ..... 123

**4. Bargaining and Justice** ..... 127
4.1 Bargaining Solutions and Principles of Social Justice ..... 128
4.1.1 Nash Bargaining Solution ..... 128
4.1.2 Kalai-Smorodinsky Bargaining Solution ..... 131
4.1.3 Egalitarian and Utilitarian Bargaining Solutions ..... 132
4.2 Rawls's Theory of Justice ..... 135
4.3 Binmore's Theory of the Social Contract ..... 138
4.4 Discussion ..... 147

**Appendix: Game-theoretic Concepts, Notation, and Results** .. 153

**List of Symbols** ..... 165

**List of Figures** ..... 169

**References** ..... 171

**Index** ..... 185