

# Contents

|   |    |
|---|----|
| INTRODUCTION  | 1  |
| 1 TENSE LOGIC AND ITS LIMITATIONS                     | 7  |
| 1.1 Tense Logic                                       | 7  |
| 1.2 The Limitations of Tense Logic                    | 11 |
| 1.3 A New Approach                                    | 16 |
| 1.4 The Model-theoretic Fallacy                       | 21 |
| 2 STATES, EVENTS, AND CHANGE                          | 24 |
| 2.1 How to Distinguish States from Events             | 24 |
| 2.2 Two Ways of Describing Change                     | 28 |
| 2.3 Changes in the World and Changes in Things        | 30 |
| 2.4 The Logic of Change                               | 33 |
| 3 FROM TENSE LOGIC TO EVENT LOGIC                     | 39 |
| 3.1 An Axiom System for Tense Logic                   | 39 |
| 3.2 Introducing Event-radicals                        | 46 |
| 3.3 Minimal Event Logic                               | 50 |
| 4 THE CLASSIFICATION OF STATES AND EVENTS             | 54 |
| 4.1 Events and their Occurrences                      | 54 |
| 4.2 Instantaneous Events                              | 59 |
| 4.3 Telic and Atelic Events                           | 66 |
| 4.4 The Aspectual Character Diagram                   | 68 |
| 5 ASPECT OPERATORS                                    | 74 |
| 5.1 The Grammatical Expression of Aspectual Character | 74 |
| 5.2 Formal Properties of <i>Ingr</i> and <i>Perf</i>  | 76 |
| 5.3 Atelic Durative Events: the 'Pofective'           | 80 |
| 5.4 Introducing the Progressive                       | 84 |
| 6 THE BROAD CLOSED SENSE OF THE PROGRESSIVE           | 89 |
| 6.1 An Axiom System for the Broad Closed Progressive  | 89 |

|   |            |
|---|------------|
| 6.2 Definition of the Broad Closed Progressive for Once-only Events | 98         |
| 6.3 The Progressive of Repeatable Events                            | 102        |
| <b>7 THE OPEN SENSES OF THE PROGRESSIVE</b>                         | <b>109</b> |
| 7.1 The Potential Progressive                                       | 109        |
| 7.2 The Intentional Progressive                                     | 122        |
| <b>8 THE NARROW SENSES OF THE PROGRESSIVE</b>                       | <b>129</b> |
| 8.1 An Axiom System for the Narrow Closed Progressive               | 129        |
| 8.2 The Material Condition for the Narrow Progressive               | 133        |
| 8.3 The Combination Problem   | 143        |
| <b>APPENDIX I: Summary of Formulae</b>                              | <b>150</b> |
| <b>APPENDIX II: Spatio-temporal Analogies</b>                       | <b>153</b> |
| <b>BIBLIOGRAPHY</b>   | <b>157</b> |
| <b>INDEX</b>  | <b>159</b> |