CONTENTS

Introduction xvii

Sigla and Abbreviations xxviii

CHAPTER ON CONDITIONAL PROPOSITIONS

I Introductory observations

1 Categorical and molecular conditional propositions distinguished 2

1-0b1 It follows from the account given that some affirmative categorical propositions make no positive assertion; but this is not so 3

1-0b1R 3

2 Some molecular conditionals are affirmative, others negative 5

3 How the antecedent and the consequent of a conditional are to be distinguished 6

II On the truth of conditionals

Ten inadequate accounts of the truth-conditions of conditionals stated and criticized 6

4 No general account of the truth-conditions of conditionals is possible, because of their variety 11

Rules for affirmative conditionals 12

Rules for negative conditionals 16

5 Every true conditional is necessary and every false one is impossible 18

5-0b 20

5-0bR 20

III Arguments against some of the foregoing

2-0b1 There are no negative conditionals 22

2-0b1R 23

1-0b2 There are no conditionals at all 25

3-0b No conditional has an antecedent or a consequent 26

2-0b2 No conditional has an opposite 26

1-0b2R, 3-0bR, 2-0b2R 27

IV Rules about conditionals

6 An argument from an inferior to a superior term is invalid. Common

terms in a conditional have merely confused supposition 28

6-0b1 The subject of an antecedent has distributive supposition 33

6-0b2 The subject of a consequent does not have merely confused supposition 33

6-0b3 A term cannot affect the mode of supposition of an earlier term 34

6-0b4 The subject of a consequent has mobile (distributive) supposition if preceded by a universal sign 34

6-0b5 It would follow that 'A penny I promise' is true; but this is not so 35

6-0b1R 35

6-0b2R 36

6-0b3R 37

6-0b4R 38

6-0b5R 39

7 A conditional entails the disjunction of the contradictory of its antecedent and its consequent 40

7.1 Some conditionals formally contain a contradiction 41

7.2 The same assertion can be made both by a categorical proposition and by a conditional 42

7-0b1 The rule would commit us to its converse, but its converse is false 42

7-0b2 The rule entails that every false conditional contains a contradiction; but this is not so 43

7-0b3 The rule entails that every affirmative conditional makes some positive assertion; but this is not so 46

Observations:

1. Every true conditional is equivalent to the corresponding disjunction 47

2. Some false conditionals entail impossible disjunctions, others entail contingent ones 48

3. Some false conditionals contain a contradiction, others do not 48

4. Some conditionals make a positive assertion, others do not 49

5. What it is to assert something positively 50

7-0b1R 51

7-0b2R 52

7-0b3R 54

7.1, 7.2-0b1 'Either (A) you are not other than yourself or (B) you are other than yourself' makes no positive assertion, therefore neither does 'If A then B' 54

7.1, 7.2-0b2 Since 'If B then A' makes no positive assertion neither does 'If A then B' 54

7.1, 7.2-0b3 In a mental inference there may be no temporal ordering of its clauses 55

7.1, 7.2-0b1R 56

7.1, 7.2-0b2R 56

7.1, 7.2-0b3R 57

8 A conditional together with its antecedent formally entails its consequent 58

8-0b1 The inference 'If you know you are not standing you are Plato; but you know you are not standing; therefore you are Plato' conforms to the rule but is not valid 58

8-0b2 The inference 'It is impossible for you to be running if it is possible for you to be running; but it is possible for you to be running; therefore it is impossible for you to be running' conforms to the rule but is not valid 59

8-0b3 The inference 'If you are running you are moving, and you are running; therefore you are moving' conforms to the rule but is not valid 60

8-0b1R 60

8-0b2R 61

8-0b3R 64

9 A conditional together with the contradictory of its consequent entails the contradictory of its antecedent 65

9-0b1 The inference 'If Socrates exists if Plato exists a human being is a donkey; but it is not the case that if Plato exists a human being is a donkey; therefore it is not the case that Socrates exists' conforms to the rule but is not valid 65

9-0b2 The inference 'If every human is every human being every animal is; but it is not the case that every human being every animal is; therefore it is not the case that every human being is' conforms to the rule but is not valid 66

9-0b3 The inference 'If you are running necessarily you are moving; but it is not the case that necessarily you are moving; therefore you are not running' conforms to the rule but is not valid 67

9-0b1R 67

9-0b2R 69

9-0b3R 70

10 An unmodalized conditional entails an equiform one governed by a necessity operator 71

10-0b1 'If Antichrist is white Antichrist is coloured' is true, but 'Necessarily if Antichrist is white Antichrist is coloured' is false 72

10-0b2 If nothing existed, it would still be the case, but would not be necessary, that if Antichrist were white Antichrist would be coloured 73

10-0b3 An unmodalized entailment proposition does not entail a corresponding modalized one 74

10-0b1R 74

10-0b2R 75

10-0b3R 75

Some theses parallel to theses about conjunctions 76

CHAPTER ON ENTAILMENT PROPOSITIONS

I Introductory observations

Definition of an entailment proposition, or inference. Distinction between affirmative and negative entailment propositions 79

1 Some inferences are valid, others invalid. Criteria of validity and invalidity 80

1-0b1 There are no invalid inferences (first argument) 86

1-0b2 There are no invalid inferences (second argument) 87

Clarification of notion of an inference 87

1-0b1R, 1-0b2R 88

II Formal and material validity

2 Some valid inferences are formally, others materially, valid 89

Definition of formal validity 89

Threefold division of formally valid inferences 90

Definition of material validity 93

Rules about materially valid inferences 94

3 From a proposition which formally implies a contradition, anything whatsoever follows formally 95

3-0b 'A human being is a donkey' does not formally imply a contradiction 99

3-0bR 99

Theses:

1. Every proposition which formally contains a contradiction is formally incompatible with every other proposition 101

2. Every proposition which only materially contains a contradiction is incompatible with every other proposition, formally with some, materially with others 102

3. Every per se impossible proposition is incompatible with itself, formally or materially 103

4. To every per se impossible proposition every other proposition is relevant 103

III Validity because of form and because of matter

4 Some valid inferences are valid because of their form, others because of their matter 104

The matter and the form of a categorical proposition 104

Theses:

1. The inferiority or superiority, identity or interchangeability of terms concern only the matter of a proposition 107

2. Possibility, impossibility, truth, falsity, necessity, contingency concern only the matter of a proposition 107

3. The logical relations between its clauses relate only to the matter of a conjunction or disjunction 108

For inferences to have the same form, they must display the same simple mode of arguing 109

Simple and mixed modes of arguing distinguished 110

Theses:

1. Every valid syllogism is valid because of its form 111

2. An inference from a conjunction to one conjunct, or from one disjunct to a disjunction, is valid because of its form 112

3. An inference from a proposition to one of its exponents, or from a ground of truth to a proposition of which it is a ground, is valid because of its form 112

4. An inference from an inferior to a superior term is valid because of its form. 113

5. An inference from a universal proposition to the corresponding indefinite or particular is valid because of its form 115

6. No materially valid inference holds because of its form 116

4-0b1 'Every A is B, every C is A, therefore every C is B' is valid only because of its matter 118

4-0b2 A mental inference does not have any matter 118

4-0b3 An inference may be valid because of its form even though no other with that form exists 119

4-0b4 Spoken and mental propositions are accidents, and so cannot have qualities or quantities 119

4-0b1R 119

4-0b2R 121

4-0b3R 121

4-0b4R 122

IV Rules about formally valid inferences

5 If the contradictory of the conclusion is incompatible with the premiss, the inference is valid 122

5a If the contradictory of the conclusion is compatible with the premiss, the inference is not valid 123

5-0b1 'Socrates is not being indicated, therefore this is not being indicated' satisfies the condition of 5 but is not valid 123

5-0b2 'This has existed, therefore this is past' satisfies the condition of 5 but is not valid 124

5-0b3 'This has been, therefore this either is or has been or will be' satisfies the condition of 5a but is valid 125

5-0b1R 126

5-0b2R 129

5-0b3R 131

6 If the contradictory of the conclusion entails the contradictory of the premiss, the inference is valid 132

6a If the contradictory of the conclusion does not entail the contradictory of the premiss, the inference is not valid 133

6-0b1 'No Plato exists and some Socrates exists, therefore it is not the case that a Plato who is other than a Socrates is being indicated' satisfies the condition of 6a but is valid 133

6-0b2 'It will be the case that this has been which has not been, therefore it is possible that this has been which has not been' satisfies the condition of 6 but is not valid 134

6-0b3 'This exists, therefore this exists' satisfies the condition of 6a but is valid 135

6-0b1R 136

6-0b2R 138

6-0b3R 138

7 If the premiss of a valid inference is true, so is its conclusion 140

7a If the conclusion of a valid inference is false, so is its premiss 140

7-0b1 The conclusion of a valid inference with a true premiss may fail to be true because no one is considering it 141

7-0b2 There are valid inferences in which the premiss will be true and the conclusion will not be true 141

7-0b3 'If you are a donkey you can bray; therefore if you are a donkey you can bray' is valid but has a necessary premiss and an impossible conclusion 142

7-0b1R 142

7-0b2R 143

7-0b3R 144

8 If the premiss of a valid inference is necessary, so is its conclusion 144

8a If the conclusion of a valid inference is contingent, its premiss is contingent or impossible 145

8-0b1 The mental inference 'God exists, therefore "God exists" is true' is valid, but its premiss is necessary and its conclusion is contingent 145

8-0b2 'Something exists, therefore something exists at the present moment' is valid, but its premiss is necessary and its conclusion is contingent 146

8-0b3 No premiss or conclusion is necessary 147

8-0b1R 147

8-0b2R 148

8-0b3R 149

9 If the premiss of a valid inference is possible, so is its conclusion 150

9a If the conclusion of a valid inference is impossible so is its premiss 151

9-0b1 'Every running thing is a donkey, therefore every running thing can be a donkey' is valid, but its premiss is possible and its conclusion is impossible 151

9-0b2 'Every running thing is a donkey and some running thing can be a human being, therefore a human being can be a donkey' is valid, but its premiss is possible and its conclusion is impossible 152

9-0b3 'The proposition "A human being is a donkey" is true, and it signifies primarily that a human being is a donkey; therefore a human being is a donkey' is valid, but its premiss is possible and its conclusion is impossible 152

9-0b1R 153

9-0b2R 154

9-0b3R 154

9-0b4 An inference with a possible premiss and an impossible conclusion may be valid because it is subordinated to a valid mental one 156

9-0b5 An inference with a necessary premiss and a contingent conclusion may be valid because it is subordinated to a valid mental one 157

9-0b6 An inference with a possible premiss and a per se necessary conclusion may be invalid because it is subordinated to an invalid mental one 157

Clarification of arguments and rule 158

9-0b4R 160

9-0b5R 161

9-0b6R 161

10 If an inference is valid, and something follows from its conclusion, then that same thing follows from its premiss 162

10a If an inference is valid, and something entails its premiss, then that same thing entails its conclusion 162

10b An argument from a first premiss to a last conclusion is valid when all the intermediate inferences are valid and not varied 163

10-0b1 'A parent exists, therefore a son or daughter exists' is valid, but 'His or her father or mother exists' follows from its conclusion and not from its premiss 164

10-0b2 'You are running, therefore either you are running or a human being is a donkey and you are not running' is valid, but 'A human being is a donkey' follows from its conclusion and not from its premiss 165

10-0b3 A conclusion follows only from its own premiss 165

Clarification of the rule 165

10-0b1R 166

10-0b2R 167

10-0b3R 167

10-0b4 'A signifies that you are a donkey, therefore A signifies that you are an animal' is valid, but 'A signifies something true' follows from its conclusion and not from its premiss 169

10-0b5 It follows from the rule that the bigger you are, the smaller you are 170

10-0b6 'Every proposition is true, therefore some proposition is true' is valid, but that you are a donkey follows from its conclusion and not from its premiss 170

10-0b4R 171

10-0b5R 173

10-0b6R 175

Theses:

1. There are inferences where nothing follows from the conclusion or entails the premiss 177

2. It may be that A entails B and B entails C, yet A does not entail C; but this does not conflict with the rule 177

11 If something is consistent with the premiss of a valid inference, it is consistent with its conclusion 178

11a If something is incompatible with the conclusion of a valid inference, it is incompatible with its premiss 179

11-0b1 'That log was destroyed, therefore it is impossible for it to exist' is valid, but 'Some animal is running' is consistent with its premiss and not with its conclusion 179

11-0b2 'Some man exists' is not consistent with 'Every man is he', but is consistent with all the corresponding singulars 180

11-0b3 'Whatever is consistent with the premiss is consistent with the conclusion' is false if only a single inference exists 180

Clarification of rule 181

11-0b1R 181

11-0b2R 181

11-0b3R 182

11-0b4 'The conclusion of this inference is necessary, therefore a human being is a donkey' is valid, but the contradictory of its conclusion is consistent with its premiss and not with its conclusion 182

11-0b5 'This inference is valid, therefore you are a donkey' is valid, but the contradictory of its conclusion is consistent with its premiss and not with its conclusion 183

11-0b6 'A human being is a donkey, therefore God exists' is valid, but ' A human being can bray' is consistent with its premiss and not with its conclusion 184

11-0b4R 184

11-0b5R 185

11-0b6R 187

12 If an inference is valid, known by you to be valid, and understood by you, and its premiss is to be accepted by you, then its conclusion is to be accepted by you 187

Clarificatory observations:

1. When an inference is known to be valid 187

2. When an inference is understood 188

3. What 'to be accepted' etc. mean 188

4. When something is to be accepted etc. 188

Proof of the rule (12) 189

12a If an inference is valid etc. and its conclusion is to be denied by you, then its premiss is to be denied by you 189

12b If an inference is valid etc. and its conclusion is to be doubted by you, then its premiss is to be doubted or denied by you 190

Clarification of these rules 190

12-0b1 There is a possible case in which 'You are a human being' is to be accepted, but 'You are an animal' is not 191

12-0b2 There is a possible case in which 'A human being is running' is to be accepted, but 'Something that can laugh is running' is not 192

12-0b3 Even if it is posited that 'A human being is a donkey' is to signify that God exists, 'God exists' is to be accepted but it is not 192

12-0b1R 193

12-0b2R 194

12-0b3R 195

13 If an inference is valid etc. and its premiss is known by you, then its conclusion is known by you 195

13a If an inference is valid etc. and its premiss is known by you to be true, then its conclusion is known by you to be true 196

13b If an inference is valid etc. and its conclusion is not known by you (to be true), then its premiss is not known by you (to be true) 196

13-0b1 'This is running, thefore some human being is running' is valid etc., but its premiss is known by you and its conclusion is not 196

13-0b2 'If Socrates exists, that man is Socrates' is valid etc., but its premiss is known by you and its conclusion is doubtful to you 196

13-0b3 'This is not known by you, therefore this is not known by you' (where 'this' indicates the conclusion) is valid etc., but its premiss is known by you and its conclusion is not 197

13-0b1R 197

13-0b2R 197

13-0b3R 199

14 If an inference is valid etc. and its premiss is to be doubted by you, its conclusion is not to be denied by you 201

14a If an inference is valid etc. and its conclusion is to be denied by you, its premiss is not to be doubted by you 201

14-0b1 There is a possible case in which the premiss of 'A pope is sitting, therefore a pope is sitting' is doubtful to you but its conclusion is to be denied by you 201

14-0b2 There is a possible case in which 'A king is sitting, therefore a human being is a donkey' is valid etc., but its premiss is to be doubted by you and its conclusion is to be denied 202

14-0b3 There is a possible case in which 'Socrates believes without hesitation that a king is sitting, and a king is sitting, therefore Socrates knows that a king is sitting' is valid etc., but its premiss is to be doubted by Plato and its conclusion is to be denied by him 202

14-0b1R 203

14-0b2R 203

14-0b3R 204

Notes on chapter on conditional propositions 207

Notes on chapter on entailment propositions 255

Appendix:

From John Venator's Logica 309

From Ralph Strode's Consequentiae 334

Bibliography 351

Index 353