The introductory chapter is a brief historical account of western logic. It records how various attempts have been made to challenge and oppose the main stream, the 2-valued logic from different standpoints, some intending to replace it, some intending to modify it, and some to extend it. The more the 2-valued logic associates itself with mathematics and the more it develops into a neat and tidy system, the more the opposition sharpens. According to some the principle of bivalence is unacceptable and according to others the law of the excluded middle itself is unacceptable; according to some 2-valued logic has its paradoxes and according to others it ignores the importance of relevance between the premise and the conclusion; according to some logic has nothing to do with mathematics and according to others logic has nothing to do with common speech. The introductory chapter concludes with a statement of the aim of the thesis. The set aim of the thesis is an examination of the various charges against 2-valued logic, as also of some alternative solutions to various problems offered by the critics.

Chapter 1 is an attempt to analyse the nature of language
and bring out its symbolic character. It also attempts to bring out the role of descriptive language in indicative form in our day-to-day life and science. Since ordinary language of common parlance is full of vagueness and ambiguity, the chapter ends with an advocacy for an ideal language so that logic may 'chase truth up the tree of grammar'. (Quine)

Chapter 2 analyses the nature of inference and validity which form the main subject matter of logic. It examines different notions of validity and entailment including those of Johnson, Lewis and relevance logicians and concludes that these fail to justify rejection of the traditional notions. In course of discussion attempts have been made to meet the criticisms against the principles of simplification, addition, disjunctive syllogism, and transitivity of entailment, - the time honoured principles of 2-valued logic.

In chapter 3, three main forms of conditionals have been explained and compared, and it has been shown that (1) 'If \( p \) then \( q \)' is a form of ordinary speech having various uses, sometimes with alogical elements, (2) \( p \rightarrow q \) just means 'either \( p \) is false or \( q \) is true', and nothing more, nothing less, and (3) \( p \) entail \( q \) which means '\( q \) is deducible from \( p \)' states that \( p \rightarrow q \) is a tautology. (2) and (3) connect their \( p \)'s and
q's by truth-value relations alone. We may say that (3) means 'p \Rightarrow q is necessarily true'. But this only means that the universal quantification of 'p \Rightarrow q', that is '\((p)(q)(p \Rightarrow q)\)' is true. The chapter takes up the concept of relevance, subjects it to thorough analysis, and brings out its ambiguous character. It is a vague notion unfit for any logical use.

Chapter 4 explains the notions of the law of excluded middle and the principle of bivalence and suggests that hostility to them is a result of utter misinterpretation of their nature. The argument based on future contingents is fallacious. Intuitionists, by assuming:

'p is true' = 'p is proved'
'p is false' = 'not-p is proved',

have confused 'opposition' with 'contradiction'. They are thus wide of the mark. A vague word has a one-many relation with its meaning and is as such, an obstacle to thought. Properly understood, sentences with vague words do not oppose the principle of bivalence or the law of the excluded middle. It has also been shown that the Strawsonian interpretation of a sentence with a denoting singular term as subject that fails to refer is unacceptable. Such a sentence like 'The King of France is bald' cannot be pointless, for it is capable of generating a false
belief that France is a monarchical state. Russellian analysis has been upheld.

Chapter 5 and 6 deal with the problems posed by a null class in a general proposition and show that the solution given by the modern formal logicians is the most satisfactory one. The alternative solutions suggested by Strawson, instead of removing the defects of Aristolelian logic, create more problems.

The opponents of 2-valued logic often make the principle of contraposition the target of their attack. According to them, contraposition cannot guarantee equivalence. They also hold that a universal general statement cannot legitimately be translated into the quantificational form \((x)(fx \supset gx)\). According to some, logical equivalence does not guarantee cognitive or propositional equivalence. These are guaranteed by inductive equivalence. Elaborate arguments have been advanced in chapter 7 to meet all their arguments and to justify contraposition, universal quantification of universal general statements and rejection of the concept of inductive equivalence.
The purpose of chapter 8 is to show that an inductive argument which is not amenable to our classical notion of validity, cannot claim any strict logical justification, though it has other forms of justification. The justification for an inductive argument is cognitive and biological.