The foundations of logic should be obvious and compelling. They should at least explain why we may not deny the tautologies of this or that logical system, if we are to have a rational system of beliefs. I believe that standard semantics helps to explain why the tautologies of the sentential calculus and lower predicate calculus should not be rejected but does little to explain why those of higher order predicate calculus and of modal sentential and predicate calculi may not be denied. I do not propose to argue here that this is so. I wish only to show how a foundation of a different kind can succeed in doing simply and elegantly what I claim standard semantics fails to do.

By standard semantics I mean the kind of semantics which can be found in almost any textbook on logic in which the logical connectives and operators of a formally (syntactically) defined language-structure are defined in terms of truth and falsity conditions. I shall call any such foundation for a logical system a truth semantics. The need for a truth semantics derives from the standard concept of validity of argument according to which an argument is valid iff there is no interpretation of its non-logical terms, (or alternatively, no possible world) in which its premises are true and its conclusion false. For it follows from this definition that to understand any sentence sufficiently for all of the purposes of logic we need to know under what interpretations (or in what possible worlds) it would be true or false.

I proceed from a different concept of validity, which leads to a different programme of analysis, and hence to a different kind of foundation for logical systems. I consider an argument in a given language to be valid iff there is no rational belief system on that language in which its premises are accepted and its conclusion rejected. Thus, for me, validity is an epistemic notion, and my problem is to define a rational belief system on a language, and to specify acceptance and rejection conditions for the sentences of that language.

I begin in the usual way by defining a language-structure syntactically, so that the sentences, operators, connectives, etc. of the language-structure can
be recognized. But a language-structure is not yet a language. For the components of the language-structure might be variously understood. How then does one define a language, and a belief system on a language? The usual approach would be: first, define your language by giving a truth-semantics for the sentences of your language-structure, and then define your belief system by specifying which sentences are accepted as true, which are considered to be false, and which are not yet definitely decided. I reject this approach, because it presupposes that the meanings of the connectives, operators, terms, predicates and sentences of a language can be specified independently of the patterns of acceptance and rejection which speakers of the language display. I think that Quine has shown convincingly that questions of meaning cannot be so neatly settled in advance.¹

My approach is to define a language via the more primitive concept of a belief system. This is more primitive in the sense that it is more immediately recognizable. If we can recognize the sentences of a language-structure, and the signs by which a person indicates his belief, disbelief or agnosticism concerning any given sentence of that language-structure, then we can describe his belief system. And we can do so even if we do not fully understand the sentences he is using. Of course, we must have some understanding of the language, if we are to recognize his signs of assent, dissent and suspended judgement. Indications of assent are not always readily distinguishable from intimations of friendship. Nevertheless, the supposed indications of assent and dissent are the basic data upon which any linguist must work.

If 'Tα' denotes the conviction that α is true, 'Fα' the conviction that α is false, and 'Xα' the absence of any firm belief concerning α, then a belief system on a language is a set of T, F and X evaluations over the sentences of that language.² But not every set of T, F and X evaluations over the sentences of a language-structure is a belief system on the same language. A given set may well be a belief system on some language of the language-structure. But we cannot decide which language it is until we are given more information. The American who says “I am mad about my flat” means something quite different from the Englishman who utters this sentence.

Speakers of the same language not only utter sentences of the same language-structure, they also have structurally similar belief systems. In particular, their belief systems display similar patterns of acceptance and rejection which are characteristic of the language. If a belief system displayed some other pattern, then, even though the sentences uttered were