THE LOGIC OF TRUTH

Edgar MORSCHER
University of Salzburg

Summary
Georg Henrik von Wright developed what he called a “Truth-Logic” by adding a truth operator “T” and appropriate axioms and rules to a standard system of propositional logic. Much more attractive than this basic system of von Wright’s “Truth-Logic”, however, is its extension to quantificational contexts which allows highly interesting philosophical applications. The paper reveals several shortcomings of von Wright’s quantificational version of his “Truth-Logic” and shows how to avoid them without giving up the basic idea of a Logic of Truth.

Dedication
During Peter’s time in Salzburg, we worked together on several projects. Some resulted in joint papers, for example those in our Joint Ventures in Philosophy (Academia Verlag: Sankt Augustin 2014). Many of our projects, however, have remained unpublished. One of these concerned Georg Henrik von Wright’s “Truth-Logic”, but only several pages (with incidental notes) have survived. So I would like to take this occasion to turn these notes into a complete essay and dedicate it to Peter.

1. Introduction

In volume III of his Philosophical Papers, entitled Truth, Knowledge, and Modality¹, Georg Henrik von Wright develops a Logic of Truth or Truth-Logic, for short (26–41). It serves as the basis of von Wright’s so-called “Logic of Predication” (42–51) which consists in an extension of his Truth-Logic to predicate logic. So in fact von Wright’s Logic of Truth is a

Propositional Truth-Logic and his Logic of Predication is the corresponding Quantificational Truth-Logic. I will therefore abbreviate in what follows the former by ‘PTL’ and the latter by ‘QTL’.²

PTL offers a stimulating and fruitful framework for important issues in philosophical logic. In section 2, I will sketch and evaluate the main ideas of PTL. In section 3, however, I will argue that QTL suffers from several shortcomings and does not even satisfy von Wright’s own aims and intuitions. In section 4, I will present a modification of von Wright’s QTL and show that it is closer to his intentions.

2. Von Wright’s PTL: An appraisal

Von Wright presents PTL as an axiomatic calculus. It differs from a standard system of propositional logic by including the symbol ‘$T$’ (which reads ‘it is true that’) in its otherwise standard vocabulary.

The vocabulary of PTL consists of sentential variables ($p$, $q$, $r$, …), representing declarative sentences, two primitive sentential connectives (¬ for negation and ∧ for conjunction) and three additional sentential connectives (∨ for disjunction, → for subjunction and ↔ for bijunction, defined in the usual way), the truth operator $T$ and brackets. The definition of a well-formed formula of PTL results from adding the following clause to the usual definition: A well-formed formula of PTL, preceded by the letter ‘$T$’, is a well-formed formula of PTL.

Von Wright offers also a truth-table procedure vis-à-vis the formulas of PTL. Since in this “semantical” form (i.e., via truth-tables), PTL is easier to grasp than are its axioms and rules, I shall restrict myself to this variant of PTL. For this purpose three kinds of truth value are assigned

² Concerning the relation between QTL and PTL, von Wright attached great importance to the following fact: Although in Truth, Knowledge, and Modality, the chapter on truth-logic (PTL) is followed by the chapter on the logic of predication (QTL), his paper “Logic of Predication”, on which the corresponding chapter of the book is based, belongs to an earlier stage of his philosophical development than his paper “Truth and Logic”. In a letter of 25 March 1992 he wrote me: “Von dem, was Sie zu meiner ‘Logik der Prädikation’ sagen, erkenne ich, dass ich, bei der Zusammenstellung des Bandes ‘Truth, Knowledge, and Modality’ eines ärgerlichen Versäumnisses schuldig bin. Ich hätte sagen sollen, dass der Aufsatz ‘The Logic of Predication’ zu einer viel früheren Phase meiner Entwicklung als Logiker gehört als der Aufsatz ‘Truth and Logic’. Ich sehe den erstgenannten nicht als eine Art von ‘Fortsetzung’ des letzteren. (Beide haben allerdings einen gemeinsamen ‘Urquell’ in einem Aufsatz von mir aus den 50er Jahren über die Negation; er enthält manche Fehler, aber ist für mein späteres Denken fruchtbar gewesen.)”