

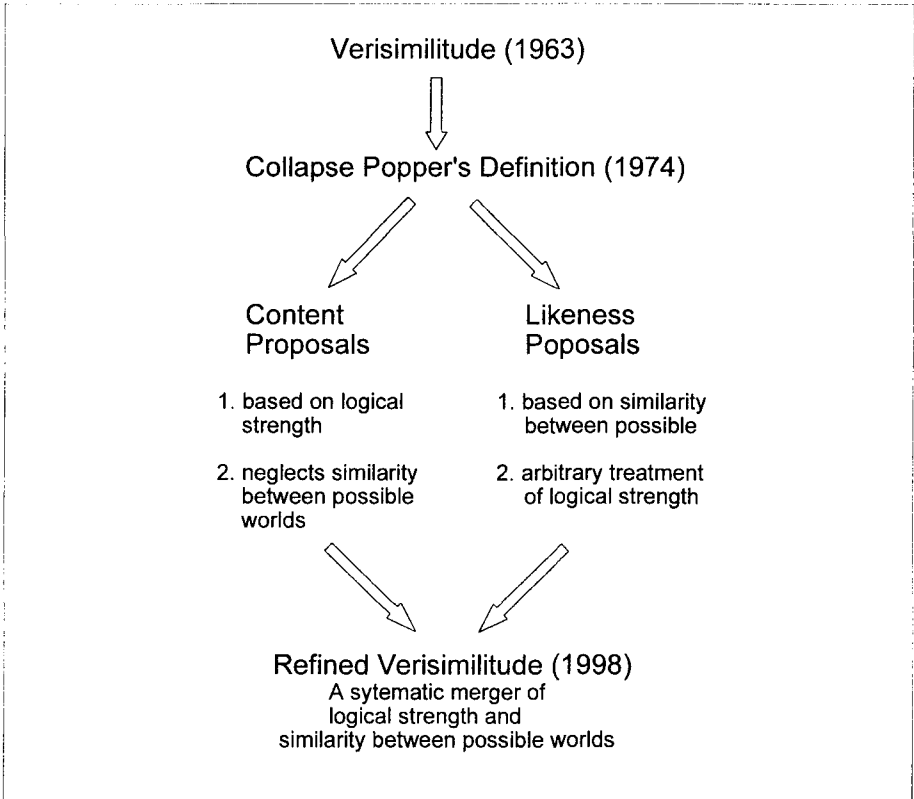
PREFACE

The subject of the present inquiry is the approach-to-the-truth research, which started with the publication of Sir Karl Popper's *Conjectures and Refutations*. In the decade before this publication, Popper fiercely attacked the ideas of Rudolf Carnap about confirmation and induction; and ten years later, in the famous tenth chapter of *Conjectures* he introduced his own ideas about scientific progress and verisimilitude (*cf.* the quotation on page 6). Abhorring inductivism for its appreciation of logical weakness rather than strength, Popper tried to show that fallibilism could serve the purpose of approach to the truth. To substantiate this idea he formalized the common sense intuition about preferences, that is: *B* is to be preferred to *A* if *B* has *more advantages* and *fewer drawbacks* than *A*.

In 1974, however, David Miller and Pavel Tichý proved that Popper's formal explication could not be used to compare false theories. Subsequently, many researchers proposed alternatives or tried to improve Popper's original definition. One of my results shows that Oddie is right when he claims that all these alternatives are either *content* or *likeness* proposals. The first base their ordering on truth-value and logical content, and neglect similarity among possible worlds; the second build their ordering primarily on similarity among models (or constituents), and treat logical strength rather arbitrarily (my formal characterization of the difference between likeness and content definitions can be found in Subsection 1.4.3). I compared the way eight alternative definitions order propositions of a finite propositional language, since this shows the barest outline of those alternatives; additionally, I compared their metatheoretical properties. The outcome clearly underlines the difference between likeness and content definitions. For instance, according to the first, the negation of the truth, which is almost a tautology, is the worst proposition; the second claims that all propositions improve the *complete falsehood*, which is the strongest description of the worst possible world.

The current study has the following outline. In Chapter 1, I introduce the differences between verisimilitude and truthlikeness definitions, which are the subjects of Chapters 2–3. Together, the first three chapters form the expository part of the present publication. In the Chapter 4, I formulate and examine the rules of theory-choice that accompany Niiniluoto's and Kuipers's definitions. Chapter 5 concerns the fact that preference relations based on similarity among possible

worlds are not invariant under extensional substitutions. This property has misleadingly been called the “language dependency” of truthlikeness definitions. Sketching the solution to this “problem”, I prepare the way for my most important contribution to the truth approximation debate, viz. the *refined verisimilitude* definition, which is presented in Chapter 6. In a way, Chapters 1–5 can be viewed as preparatory steps leading up to the presentation of my new preference ordering of propositions in Chapter 6. The predecessors of my proposal are shown in the diagram below.



Verisimilitude and Truthlikeness

It is important to note that the present inquiry does not exclusively concern formal philosophy of science. The question of ordering propositions has a much wider scope, and is of general logical interest. Readers who are mainly concerned with preferences among possible worlds or propositional constituents may skip the Chapters 2–5; and having used Chapter 1 as an intuitive introduction, they may start reading Chapter 6.

Thanks are due to many people with whom I discussed parts of the present publication. First of all I am indebted to Theo Kuipers and Johan van Benthem; the first for coming up with the idea to write on verisimilitude and truthlikeness; the second for being instrumental in finishing the project. Johan van Benthem inspired me to put the approach-to-the-truth project in a much broader context. Further, I owe a special debt to Veikko Rantala and David Miller who both spent time and energy on my solution of the language dependency problem (see Chapter 5). Regrettable, I did not manage to make David Miller change his mind on his constraint of invariance of likeness orderings under extensional substitutions. I owe much to Erik Krabbe, who with remarkable and uncompromising dedication went meticulously through the entire manuscript indicating the places that needed correction or more explanation. It is Krabbe's contribution that increased the readability of the technical details considerably. Thanks are also due to Miranda Aldam-Breary who spent many hours reading the text with a keen 'eye' to the English. It is needless to say that all errors and imprecisions in the present publication remain entirely mine.

Finally, I gratefully acknowledge my stipend as a Grotius Fellow at the University of Amsterdam which enabled me to finish the present publication and to continue my research into the relation between Belief Revision and Verisimilitude. I dedicate the present publication to my beloved wife and daughter.

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