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THESIS SUBMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY
IN THE UNIVERSITY OF OXFORD

Abstract

of

KNOWING AND UNDERSTANDING
(Relations between meaning and truth, meaning and
necessary truth, meaning and synthetic necessary truth.)

A. Sloman

St. Antony's College
Oxford
Trinity Term
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The aim of the thesis is to show that there are some synthetic necessary truths, or that synthetic apriori knowledge is possible. This is really a pretext for an investigation into the general connection between meaning and truth, or between understanding and knowing, which, as pointed out in the preface, is really the first stage in a more general enquiry concerning meaning. (Not all kinds of meaning are concerned with truth.) After the preliminaries (chapter one), in which the problem is stated and some methodological remarks made, the investigation proceeds in two stages. First there is a detailed inquiry into the manner in which the meanings or functions of words occurring in a statement help to determine the conditions in which that statement would be true (or false). This prepares the way for the second stage, which is an inquiry concerning the connection between meaning and necessary truth (between understanding and knowing apriori).

The first stage occupies Part Two of the thesis, the second stage Part Three. In all this, only a restricted class of statements is discussed, namely those which contain nothing but logical words and descriptive words, such as "Not all round tables are scarlet" and "Every three-sided figure is three-angled". (The reasons for not discussing proper names and other singular definite referring expressions as given in appendix I.)

Part two starts with some general remarks about propositions and meanings. We can answer questions as to what meanings and propositions are, by describing the criteria for deciding whether words are used with the same meanings or whether sentences are understood to express the same proposition. It turns out that there are various levels at which criteria for identity are required, and various kinds of criteria. (E.g. we need criteria for identifying the functions of *statements* as opposed to commands or questions, criteria for distinguishing the functions of descriptive words and referring expressions, criteria for identifying or distinguishing the meanings of individual descriptive words.) In our language, and others like it, the existence of a conceptual scheme involving universals (observable properties and relations is pre-
supposed by the methods used for making the finest distinctions between meanings of descriptive words. (Section 2.C.)

1) Descriptive words.

After the general remarks in chapter two about criteria for identity of meaning and the existence of universals, chapter three goes on to show in some detail how descriptive words (such as "scarlet", "round", "glossy", "table", and "sticky") can be given their meanings by being correlated with observable properties or combinations of properties.

These words can be classified according to how their meanings are "synthesized" from properties. There are logical syntheses and non-logical syntheses, and both kinds may be further subdivided. (In 3.C a tentative answer is given to the question: How does talking about universals, i.e. properties and relations, *explain* our use of descriptive words?) In this and the next chapter many hidden complexities, including a number of different kinds of indeterminateness (4.A and 4.B) are found even in the meanings of innocent-looking words like "horse" and "red", but these complexities are taken account of within the framework of a theory which does not assume that correlations between words and universals must be of the simple one-one type. The existence of "borderline cases" is due to the existence of these complexities.

The importance of all this is that it shows how "sharp" criteria may be used for identifying and distinguishing meanings of descriptive words, and helps to explain why the debate about the existence of synthetic necessary truths has gone on for so long: namely, philosophers have unwittingly used loose and fluctuating criteria for identity of meanings. Another cause has, of course, been unclarity about the significance of the terms "analytic", "synthetic", "necessary", etc. These are dealt with later on, their application being illustrated by examples arising out of the discussion of semantic correlations between descriptive words and universals.

ii) Logical words.

Part Two concludes with chapter five, in which the role of logical constants in sentences is explained by extending and generalizing some ideas of Frege, Russell and Wittgenstein (in "The Tractatus"). The explanation makes use of the concept of what I call a "rogator", which, like a *function*, takes arguments and yields values; the difference is that to a function there corresponds a rule or principle which fully determines its value for any given
argument-set, whereas to a rogator there corresponds a
principle or technique for finding out the value, the
outcome of which may depend on contingent facts, or how
things happen to be in the world. So the value of a
rogator for a given argument-set is not fully determined

by the rogator and the argument-set, but depends on facts
which may have to be discovered by empirical observation,
and may change from time to time. The essential thing
is that there is a technique, which can be learnt, which,
together with the argument-set and the observable facts,
determines the value. A special type of rogator is a
"logical rogator", which corresponds to the logical form
of a proposition and may be represented by sentence-
matrices, such as "all P Q's are not R". A logical
rogator takes as arguments sets of descriptive words, such
as ('round', 'table', 'scarlet') and yields as values the
words "true" and "false". Which is the value depends on
the meanings of the descriptive words (the properties with
which they are correlated) and the facts. (In 5.B.18 a
variation on this is mentioned, in which sentences and
their negations are taken as values.) In learning to
speak, we learn general rules for the use of logical words
and constructions, and these are what determine which
logical technique (or which logical rogator) corresponds
to any sentence. This shows that the commonly held view
that the functions of logical words are explicable in
purely syntactical terms is either false or vague and
superficial. What lies behind it is the fact that the
distinguishing feature of logical constants is their
topic-neutrality (5.A): they are governed by rules which
are so general that from the occurrence of a logical word,
c.g. "or". in a sentence one can deduce nothing about the
subject-matter, or topic, of which it treats.

Thus, Part Two shows that the meanings or descriptive
words are given by correlations with universals, and the
meanings or functions of logical words by correlations
with logical rogators, or general logical techniques for

finding truth-values, and explains how these meanings or
functions determine the conditions in which sentences
composed of descriptive words and logical constants express
true, or false, propositions.

(3 Some by-products of this are mentioned in the thesis.
Logical relations, such as entailment and incompatibility,
are explained as arising out of relations between logical
rogators, or, more specifically, between techniques for
discovering truth-values. This explains the connection
between the geometrical forms of sentences and logical properties of the propositions they express. and shows how formal logic is possible. Secondly, we can clarify the difference between the "implications" of a statement and its "presuppositions", by pointing out that a rogator, like a function. has a limited "domain of definition" and, further, certain empirical conditions may have to be satisfied if its technique is to be applicable to finding out the value corresponding to a given set of arguments. Thus, the presuppositions of a statement are concerned with the conditions which must be satisfied if it is to have a truth-value at all, and its implications are concerned with what must be the case if the techniques are applicable and the truth-value comes out as "true". All this serves to explain why apparently well-formed sentences may be senseless, and seems to provide the basis for a simpler and more general theory of types and category rules than that which uses the notion of the "range of significance" of a predicate. This is suggested, but not developed, in 5.E.)

Meaning and Necessary Truth

Part Three explains, in chapter six, how it is possible for a statement to be analytic and then goes on, in chapter seven, to give a more general account of necessarily true statements and show that some are synthetic.

Some uses of the concepts of "possibility" and "necessity" are explained by drawing attention to certain general and fundamental facts, but for which our thought and language and experience could not be as they are, such as the fact that universals (observable properties and relations) are not essentially tied to those particular objects which happen to instantiate them. (The table on which I am writing is brown, but it might have had a different colour, and the colour brown might have had other instances than those which it does actually have, without being a different colour: all this makes use of some of the general remarks about conceptual schemes, in chapter two.) This shows how it makes sense to talk about "what might have been the case but is not". or "what is possible though not actual". It is then noted that although universals are not essentially tied to their actual particular instances, nevertheless they may be essentially tied to one another (or incompatible with one another, etc.). The property of being bounded by four plane surfaces cannot occur without the property of having four vertices. These connections between properties can justify our assertion of some kinds of subjunctive conditional statements, such as "If this had had four sides, than it would have had four angles", and therefore enables us to assert that certain universal statements
*could* not have had any exceptions. This explains a concept of "necessity", in terms of what would be the case in any possible state of this world, where "this world" is a world containing the same universals (observable properties and relations) as our world.

The description of the connection between meaning and necessary truth follows on naturally from the general description of the connection between meaning and truth.

Normally the value of a rogator for a given set of arguments depends an how things are in the world, and has to be discovered by applying the appropriate technique.

But in same "freak" cases the value is independent of the facts and may be discovered by *examining* the technique and the arguments, or relations between the arguments. In particular, the truth-value of a proposition, in "freak" cases, may be discovered by examining the logical technique corresponding to its logical form and noting relations between the meanings of the non-logical words used to express it. Since how things are in the world need not be known, the truth-value would be the same in all possible states of affairs. (But the truth value may also be discovered in the normal way, by applying the technique instead of examining it.

If one fails to notice that it is necessarily true that every cube has twelve edges one may set out to discover its truth by observing cubes. The fact that empirical enquiries are relevant even where analytic propositions are concerned brings out the defects in most accepted definitions of "analytic".)

So the truth-value of a necessarily true proposition is determined by (a) its logical form, or the logical techniques corresponding to its form and (b) relations between the meanings of non-logical words, or, more specifically, connections between the properties referred to. The notion of a definition or partial definition is examined and found to generate one kind of relation between meanings or properties, called "identifying relations". An "analytic" proposition may then be defined as one whose truth-value can be determined only by its logical form and identifying relations between meanings. This leaves open the question whether there are other sorts of connections between properties, in virtue of which statements may be necessarily true though not analytic. This
question is investigated in sections 7.C and 7.D, where it is shown how simple geometrical proofs (using diagrams, for example) may enable one to perceive connections between geometrical properties in a manner which is quite different from the way in which one draws logical conclusions from identifying relations between the meanings of words. This description of the workings of "informal proofs" shows, therefore, how it is possible first of all to identify universals by being acquainted with them and then, by examining them, to have a further "insight" into their interconnections. This helps to answer the question which was left unanswered in chapter five, as to how one can discover that logical rogators are connected in certain ways (and hence that propositions have certain logical properties) by examining their techniques.

All this shows that there are both analytic and synthetic necessary truths. The former are true in virtue of their logical form and identifying relations between the meanings of non-logical words used to express them. The latter are true in virtue of all this, and, in addition, some non-identifying relations between meanings. In order to know the truth-value of an analytic statement, it is enough to know how the logical constants work and that some of the descriptive words stand in certain identifying relations with others, such as that some of them are used as abbreviations for other expressions. But when the statement is synthetic, one must, in addition to knowing that the meanings of the words are identifiingly related in certain ways, also know what the meanings of some of the descriptive words are, so as to be able to examine the properties referred to and discover the connections between them. (It is assumed that all these statements have truth-values. This cannot always be discovered apriori. See remarks about applicability-conditions for logical techniques.)

((The discussion of informal proofs is only a beginning. and does not pretend to be conclusive. Complications arising out of indeterminateness of meaning and the fact that neither "absolutely specific" nor "mathematically perfect" properties (e.g. the property or being bounded by four perfectly plane sides) can be described as "observable", are mentioned, but not discussed in detail.))

Chapter eight is a concluding summary. It is followed by appendices. The first explains why nothing has been said about singular definite referring expressions. The second describes some of the confusions which arise out of too much concentration on symbolic logic. The third
discusses the notion of "implicit knowledge": knowledge which one say be able to apply without being able to formulate. The fourth makes some remarks about philosophical analysis and suggests some further developments of the thesis. The fifth appendix tentatively suggests that examples of synthetic necessary truths may be found in connection with other than geometrical properties. Finally, the concept "apriori" is discussed, briefly.

[Transcribed from digitised PDF 9 Feb 2014. Some errors may remain.] [Please send corrections to a.sloman @ cs.bham.ac.uk]