Metaphysics Handouts
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Handout 7

Truth-functions, tautology and logic: Wittgenstein, White

Example 1 (A very safe bet). You ask a friend in Ankara about the weather, and she replies:

(7-1) Either it's raining, or it isn't.

She can't be wrong, and you've learned nothing about the weather. A look out of the window settles which half of (7-1) holds, but you knew that (7-1) was true without looking. How did you know? 4.461

What is logic about? The Tractarian answer is that logic says nothing, and that its certainty and its emptiness are two sides of the same coin. To see why, begin with how any proposition says something. An elementary proposition asserts that a state of affairs exists: it's true if that state of affairs does exist and false if it doesn't. Every other proposition agrees with some combinations of truth and falsity of the elementary ones, their 'truth-possibilities', and disagrees with the rest. 4.21, 4.25
That is its sense: a proposition is the expression of its truth-conditions. So, as Proposition 5 has it, every proposition is a 'truth-function' of elementary propositions: settle their truth-values, and you've settled its own. Elementary propositions match states of affairs one to one, so if you knew the truth-value of each, you would know everything that is the case. 4.2, 4.431 W84-85

Example 2. Suppose that '*p*' is elementary and says that it's raining. It has two truth-possibilities, True and False. So there are four propositions. '(TF)(*p*)' says that it's raining, and '(FT)(*p*)' that it isn't. '(TT)(*p*)' agrees with both possibilities: that's (7-1). '(FF)(*p*)' agrees with neither. Nothing in the four signs stands for 'not' or 'or'.

Question 3. A sentence with 'because', say 'The match lit, because it was struck', isn't a truth-function of its two clauses: both can be true and the whole false. Does that refute Proposition 5, which speaks of *elementary* propositions? W84

Senseless, not nonsense. Two truth-functions are extreme cases: a 'tautology' is true for every truth-possibility, and a 'contradiction' is false for every one. A tautology has no truth-conditions, since it's true unconditionally, and so it says nothing. 4.46
It lacks sense, but it isn't nonsensical: it's part of the symbolism, as '0' is part of arithmetic's. Nor is it a picture of reality. Its representational relations cancel one another, and it leaves the whole of logical space open, while a contradiction fills it. 4.461-4611 4.462-463

Example 4. Let's use White's test to distinguish the senseless ('sinnlos') from the nonsensical ('unsinnig'). Conjoin a tautology with a proposition that has sense, say 'The door is shut, and it's raining or it isn't'. The result says exactly what 'The door is shut' says. Conjoin nonsense instead, such as Wittgenstein's 'Socrates is identical', and the result is nonsense. W81 5.473

Question 5. What's the difference between saying nothing and failing to say anything? If a tautology is the blank canvas, what is a contradiction?

Nothing corresponds to 'not'. The logical words don't stand for anything: there are no 'logical objects'. No object corresponds to the Ts and Fs of a table, or to its lines and brackets. And the logical signs can be defined by one another, so they aren't primitive signs, still less signs for relations. 5.4 4.441, 5.42

Example 6. Suppose 'not' named an object. Then 'It isn't the case that it isn't raining' would be about that object, and 'It's raining' wouldn't be, so they'd say different things. They say the same: the two negations cancel and vanish. 5.44 5.253-254

Logic says nothing. What is the particular characteristic of logical truth? For Russell, it's a true proposition that is completely general, with nothing in it but logical constants and variables. Wittgenstein's objection, which White calls decisive, is that generality is neither necessary nor sufficient. W104-105

? *Example* 7. A general proposition can be true by accident. Wittgenstein's case is Russell's axiom of reducibility. You can imagine a world in which it fails, and if it's true, that's a fortunate accident. And a proposition with a particular subject can be a truth of logic, such as 'It is not the case that it is both raining and not raining'. 6.1231-1233 W105

Instead, the unique characteristic is tautology. The propositions of logic are tautologies, so they say nothing, and any theory that makes them appear to have content is false. What is true, however the world is, tells us nothing about how it actually is, and needs no special logical facts to make it true. Compare our Carnap's 'The elimination of metaphysics': statements true by their form alone say nothing about reality. 6.1-6.111 W105
Yet logical propositions presuppose that names have meaning, and that elementary propositions have sense. And the fact that certain combinations of symbols are tautologies indicates something about the world. 6.124

Question 8. Does emptiness explain necessity, or does it only rename it? And how can what says nothing indicate something about the world? '*p*' and '*q*' can be combined into a tautology shows that '*q*' follows from the other two. 6.1201

What does 'true' add? 'Is true' isn't the verb of a proposition, as Frege thought. What is true must already contain the verb, and a proposition's sense is just what is affirmed. Nor are 'true' and 'false' two properties among others. If they were, it would seem a remarkable fact that every proposition had one of them, no more obvious than that all roses are either yellow or red. 4.063-4.064 6.111

Question 9. If 'true' is neither the verb of a proposition nor a property of it, what does calling a proposition true add to asserting it? The *Tractatus* explains a proposition's sense by the conditions under which it's true. Can someone take in that explanation without already knowing what 'true' means? (We'll return to this question in discussing Dummett's 'Truth'.) 4.063, 4.431