CHAPTER VIII

WHAT IS LOGICAL ANALYSIS?*

It has often been noted that philosophy and science express two very different types of attitude of the human mind. The scientific mind searches for knowledge, i.e., for propositions which are true, which agree with reality. On a high level, it rises to the construction of a theory which connects the scattered and in their isolation unintelligible facts and in this way explains them. But the philosopher cannot be satisfied with this. The very nature of knowledge and truth becomes problematic to him; he would like to get down to the deeper meaning of what the scientist does. Now what can be gained through philosophy is an increase in inner clarity. The results of philosophical reflection are not propositions but the clarification of propositions. Wherever real progress has been made in the history of philosophy, it resided not so much in the results as in the attitude to the questions: in what was regarded as a problem, or alternatively, in what was recognized as a falsely formulated question and excluded as such. Thus when Hume showed in his famous critique of the concept of causality that we only perceive the succession of events and never an inner bond that ties them together, the permanent gain from his reflection did not reside in a philosophical proposition – an axiom around which other propositions cluster as around a crystal of truth – but in the clarification of the sense of causal propositions; and hence not in an increase in the number of propositions but rather in its diminution: in the disposal of all that baggage of seeming truths and imagined knowledge that trailed behind that false idea. Hume analysed the concept of causality; and in this sense, philosophy can be called the logical analysis of our thoughts.

But what does this logical analysis consist in? It seems to me that the correct philosophical attitude depends to a large extent on clarity at this point, and it is therefore in our interest to become more familiar with this concept.

Analysis means dissection, dismemberment. Thus logical analysis seems to mean: dissection of a thought into its ultimate logical elements. And here

we are only too ready to call to mind analogies from various other fields: As the physicist analyses white light through a prism and breaks it up into the various colours of the spectrum, as the chemist analyses a substance and uncovers its chemical structure, so, roughly, do we imagine the business of the philosopher: his job is to lay bare the structure of a thought, its logical construction. Is this comparison correct?

The question known as the problem of elementary propositions seems to me to provide a good example for this purpose. This question is connected with certain more profound investigations into the structure of our language, which will now be sketched in a few words.

Propositions can be tied together and assembled into higher units, and this can be done in various ways. Language employs different conjunctions for this purpose, like 'and', 'or', 'if', 'because', 'although', 'after', etc. These can be put into two sharply separated categories, which will be illustrated by the following examples:

'it has been getting warm and the sun is shining'
'it has been getting warm because the sun is shining'

The characteristic difference between the two kinds of conjunctions is this: In the first case I only need to establish the truth of the individual propositions to be certain of the truth of the whole; but not in the second case: even if it has been getting warm and the sun is shining, there need be no causal connection between the two processes. The truth of the complex proposition is not yet guaranteed by the truth of its parts.

A complex of the first kind is called a 'truth-function'. More precisely: $p$ is called a truth-function of the propositions $p, q, r$ (its arguments), if the truth or falsity of $p$ depends only on the truth-values of $p, q, r$ ... The simplest examples are 'p and q', 'p or q', 'if p then q'. If we consider that an unlimited number of combinations can be formed from $n$ given propositions by means of 'and', 'if', 'not', etc., we are easily led to the opinion that there is an infinite number of such strings. In fact, their number is well limited, for it turns out that there occur repetitions in the series of strings, i.e., combinations which look quite different outwardly but which express exactly the same sense. The best way to see this is to make use of a different representa-