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REMARKS ON THE LINGUISTIC FOUNDATIONS OF PHYSICS

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In this paper, we present a linguistic theory of physics taken as the representative of that older group of sciences generically referred to as the physical sciences. These extend from what is acknowledged to be 'pure physics' to the rigorous parts of biology such as bio-physics, bio-chemistry and genetics. We wish to exclude such disciplines as descriptive biology, all purely descriptive sciences, as well as the behavioural sciences which, from the point of view adopted here, are either proto- or pseudo-sciences, depending on the particulars of the case.

This is by no means the first time that physics has been looked upon as a language, as is well-known. We have simply attempted to bring together some of the salient results of modern research into the foundations of science and philosophical linguistics. Of the many views which have been advanced on these questions, we are reacting most 'to' (not 'against') L. Wittgenstein so far as philosophical linguistics is concerned, and K. R. Popper so far as the logic of physics is involved. It will be quite evident that they would not assent to many of the things which are said herein. Our heritage however, is of the spirit, not of the letter, and we owe much where we have learnt much.

By 'language' we shall understand 'a system of symbols, syntactical rules and definitions which is developed and organized so as to give meaning to certain aspects or features of the field of human experience'.

The main function of language so understood is consequently epistemological. The otherwise important problem of the communicability of the meaning thus expressed will not be entered into here. We shall simply assume that the language is 'public' in the sense that the definitions are either operational in the case of the semantical terms, or are nominal in the case of theoretical terms, and that furthermore all such terms are univocal.

It is desirable at this point to define a few important terms which are used in senses that are somewhat at variance with the prevalent usages of philosophers of language and logicians. This divergence in the use of terms is not practiced here for the sake of originality, but because of the necessity inherent in the linguistic approach to the foundations of physics.

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