Natural Sciences

In *Tractatus Logico-Philosophicus*, Ludwig Wittgenstein endorses an empiricist view of natural sciences. Wittgenstein’s empiricism is rooted in his three-level hierarchical view of the world, the thought, and the proposition. For Wittgenstein, the world is the totality of facts, and the fact can be *decomposed* into atomic facts. The atomic fact is *atomic* and *basic* in Wittgenstein’s view of the world in the sense that atomic facts are independent of one another, and that the existence of one atomic fact cannot be *inferred* from that of another. Moreover, Wittgenstein’s “pictorial theory” of language says that the atomic fact is *expressed* and *represented* by the *elementary* proposition. This form of isomorphism together with the independence of the atomic fact implies the independence of elementary propositions that express atomic facts; in other words, the truth of an elementary proposition does not depend upon the truth of another elementary proposition. Therefore, one needs to compare with the reality the possible state of affairs represented by an elementary proposition in order to know the truth of the proposition. It hence follows that there is no *a priori* proposition.

Wittgenstein applies this form of empiricism to natural sciences. In short, Wittgenstein holds that the law of causality is a form of laws of natural sciences; in other words, laws of natural sciences are *a priori*, general hypotheses that assert causal relations. For instance, Coulomb’s law in electromagnetism, , asserts two stationary, electrically charged particles will cause an electrostatic force with the magnitude , which is attracting or repelling depending on whether the two charges have opposite signs or not. Such laws of natural sciences, however, do not depict possible states of affairs in the world, and hence say nothing about the world. In order to use laws of natural sciences in the world, one needs to *particularize* them, i.e. to substitute the variables in a law of natural sciences with particular values that represent possible states of affairs in the world.

Wittgenstein’s empiricist view of natural sciences has several important implications and applications in philosophy of science. Firstly, Wittgenstein holds that the Darwinian theory of evolution is no more than one possible *hypothesis* of biological evolution amongst many proposed hypotheses, equally with other opponent theories of evolution. There is no obviousness in the Darwinian theory, and people do not know *actual* explanations of biological evolution from the Darwinian theory.

Secondly, from Wittgenstein’s philosophy of natural sciences it follows that one cannot see the truths of hypotheses about the future. According Wittgenstein’s view, any scientific utterance of the future is merely a hypothesis. Hence, in order to know the truth of such a hypothesis, one needs to compare it with the reality, but any future state of affairs has not happened yet, which implies that one cannot know whether a scientific conjecture of the future is true or false. Even though the majority of people may *believe* that the sun will rise from the east tomorrow, according to the generally accepted hypothesis of the solar system, it is still one of many hypotheses of the universe, and one cannot *know* its truth merely from itself.

In a nutshell, Wittgenstein’s empiricist view of natural sciences maintains that laws natural sciences do not explain *why* things happen in the world but merely provide possible conjectures that describe what happens in the world. In other words, natural sciences are incapable of explaining the world, and merely offer descriptions of the world by means of hypotheses. For one can merely get to things that constitute atomic facts in the world by means of names, and can never get deeper to the world than names. In this sense, natural science is like a modern religion because of their incapability of explaining the world.