

4.01 The proposition is a picture of reality. The proposition is a model of the reality as we think it is.

4.011 At the first glance the proposition—say as it stands printed on paper—does not seem to be a picture of the reality of which it treats. But nor does the musical score appear at first sight to be a picture of a musical piece ; nor does our phonetic spelling (letters) seem to be a picture of our spoken language. And yet these symbolism prove to be pictures—even in the ordinary sense of the word—of what they represent.

4.012 It is obvious that we perceive a proposition of the form aRb as a picture. Here the sign is obviously a likeness of the signified.

4.013 And if we penetrate to the essence of this pictorial nature we see that this is not disturbed by apparent irregularities (like the use of # and b in the score). For these irregularities also picture what they are to express; only in another way.

4.014 The gramophone record, the musical thought, the score, the waves of sound, all stand to one another in that pictorial internal relation, which holds between language and the world. To all of them the logical structure is common, (Like the two youths, their two horses and their lilies in the story. They are all in a certain sense one.)

4.0141 In the fact that there is a general rule by which the musician is able to read the symphony out of the score, and that there is a rule by which one could reconstruct the symphony from the line on a gramophone record and from this again—by means of the first mule—construct the score, herein lies the internal similarity between these things which at first sight seem to be entirely different. And the rule is the law of projection which projects the symphony into the language of the musical score. It is the rule of translation of this language into the language of the gramophone record.

4.015 The possibility of all similes, of all the imagery of our language, rests on the logic of representation.

4.016 In order to understand the essence of the proposition, consider hieroglyphic writing, which pictures the facts it describes. And from it came the alphabet without the essence of the representation being lost.

4.02 This we see from the fact that we understand the sense of the propositional sign, without having had it explained to us.

4.021 The proposition is a picture of reality, for I know the state of affairs presented by it, if I understand the proposition. And I understand the proposition, without its sense having been explained to me.

4.022 The proposition shows its sense. The proposition shows

how things stand, if it is true. And it says, that they do so stand.

4.023 The proposition determines reality to this extent, that one only needs to say “Yes” or “No” to it to make it agree with reality. Reality must therefore be completely described by the proposition. A proposition is the description of a fact. As the description of an object describes it by its external properties so propositions describe reality by its internal properties. The proposition constructs a world with the help of a logical scaffolding, and therefore one can actually see in the proposition all the logical features possessed by reality if it is true. One can draw conclusions from a false proposition.

4.024 To understand a proposition means to know what is the case, if it is true, (One can therefore understand it without knowing whether it is true or not.) One understands it if one understands its constituent parts.

4.025 The translation of one language into another is not a process of translating each proposition of the one into a proposition of the other, but only the constituent parts of propositions are translated. (And the dictionary does not only translate substantives but also adverbs and conjunctions, etc, and it treats them all alike.)

4.026 The meanings of the simple signs (the words) must be explained to us, if we are to understand them. By means of propositions we explain ourselves.

4.027 It is essential to propositions, that they can communicate a new sense to us.

4.03 A proposition must communicate a new sense with old words. The proposition communicates to us a state of affairs, therefore it must be essentially connected with the state of affairs. And the connection is, in fact, that it is its logical picture. The proposition only asserts something, in so far as it is a picture.

4.031 In the proposition a state of affairs is, as it were, put together for the sake of experiment. One can say, instead of, This proposition has such and such a sense, This proposition represents such and such a state of affairs.

4.0311 One name stands for one thing, and another for another thing, and they are connected together. And so the whole, like a living picture, presents the atomic fact.

4.0312 The possibility of propositions is based upon the principle of the representation of objects by signs. My fundamental thought is that the “logical Constants” do not represent. That the logic of the facts cannot be represented.

4.032 The proposition is a picture of its state of affairs, only in so far as it is logically articulated. (Even the proposition “ambulo” is composite, for its stem gives a different sense with another termination, or its termination with another stem.)

4.04 In the proposition there must be exactly as many things distinguishable as there are in the state of affairs, which it represents. They must both possess the same logical (mathematical) multiplicity (cf. Hertz's *Mechanics*, on Dynamic Models).

4.041 This mathematical multiplicity naturally cannot in its turn be represented. One cannot get outside it in the representation.

4.0411 If we tried, for example, to express what is expressed by “ $(x).fx$ ” by putting an index before fx , like “ $\text{Gen}.fx$ ”, it would not do, we should not know what was generalized. If we tried to show it by an index g , like: “ $f(x?)$ ” it would not do—we should not know the scope of the generalization. If we were to try it by introducing a mark in the argument places, like “ $(G,G). F(G,G)$ ”, it would not do—we could not determine the identity of the variables, etc. All these ways of symbolizing are inadequate because they have not the necessary mathematical multiplicity.

4.0412 For the same reason the idealist explanation of the seeing of spatial relations through “spatial spectacles” does not do, because it cannot explain the multiplicity of these relations.

4.05 Reality is compared with the proposition.

4.06 Propositions can be true or false only by being pictures of the reality.

4.061 If one does not observe that propositions have a sense

independent of the facts, one can easily believe that true and false are two relations between signs and things signified with equal rights. One could then, for example, say that “p” signifies in the true way what “ $\sim p$ ” signifies in the false way, etc.

4.062 Can we not make ourselves understood by means of false propositions as hitherto with true ones, so long as we know that they are meant to be false? No! For a proposition is true, it what we assent by means of it in the case; and if by “p” we mean $\sim p$, and what we mean is the case, then “p” in the new conception is true and not false.

4.0621 That, however, the signs “p” and “ $\sim p$ ” can say the same thing is important, for it shows that the sign “-” corresponds to nothing in reality. That negation occurs in a proposition, is no characteristic of its sense ($\sim \sim p = p$). The propositions “p” and “ $\sim p$ ” have opposite senses, but to them corresponds one and the same reality.

4.063 An illustration to explain the concept of truth. A black spot on white paper; the form of the spot can be described by saying of each point of the plane whether it is white or black. To the fact that a point is black corresponds a positive fact; to the fact that a point is white (not black), a negative fact. If I indicate a point of the plane (a truth-value in Frege's terminology), this corresponds to the

assumption proposed for judgment, etc. But to be able to say that a point is black or white, I must first know under what conditions a point is called white or black; in order to be able to say “p” is true (or false) I must have determined under what conditions I call “p” true, and thereby I determine the sense of the proposition. The point at which the simile breaks down is this; we can indicate a point on the paper, without knowing what white and black are; but to a proposition without a sense corresponds nothing at all, for it signifies no thing (truth-value) whose properties are called “false” or “true”; the verb of the proposition is not “is true” or “is false”—as Frege thought—but that which “is true” must already contain the verb.

4.064 Every proposition must already have a sense; assertion cannot give it a sense, for what it asserts is the sense itself. And the same holds of denial, etc.