Wittgenstein here espouses his 'picture theory' of meaning, which is one of his most celebrated innovations in the text. Although much of it is contained in the second proposition, these passages should be interpreted in conjunction with certain passages in the fourth proposition also.

Historical Introduction

Von Wright tells us that the picture theory was discovered by Wittgenstein in 1914, after having read a report in a magazine about a lawsuit in Paris involving an automobile accident. In the ensuing trial, a scale model of the accident scene was devised so as to recreate the events: miniature cars and people standing for the objects at the scene, in their respective spacio-temporal order. As the story goes, it occurred to him at this time that just as the model could serve as a representation of the accident—insofar as the parts of the model (these miniature automobiles, houses, people, etc) stand for the objects in the world (the real life automobiles, houses, etc, in the world)—then this might also bear some insight into the nature of the proposition. In his Notebooks, dated 29 September, 1914 Wittgenstein wrote: “In the proposition a world is as it were put together experimentally. (As when in the law-court in Paris a motor-car accident is represented by means of dolls, etc.)” This is purported to be the beginning stages of the Tractarian theory of meaning, “[w]hat the picture represents is [the proposition's] sense. In the agreement or disagreement of its sense with reality, its truth or falsity consists.” (2.221-2) As von Wright explains:

The picture [in court] served as a proposition; that is, as a description of a possible state of affairs. It had this function owing to the correspondence between the parts of the picture and things in reality. It now occurred to Wittgenstein that one might reverse the analogy and say that a proposition serves as a picture, by virtue of a similar correspondence between its parts and the world. The way in which the parts of the proposition are combined—the structure of the proposition—depicts a possible combination of elements in reality, a possible state of affairs.

Wittgenstein directly credits the development of this idea to a mix of both the aesthetic notion of a picture, and the mathematical usage of a model—closely related to Hertz' use of the term in his Principles of Mechanics. There has also been a flood of recent work relating to Wittgenstein's engineering training, attempting to show that the picture theory is an outgrowth of both the abilities due to his training in descriptive geometry, and also the use of scale models to test mechanical equipment (especially as relates to heavier than air flight and aerodynamic testing in wind tunnels).

When a Picture is not a Spacial Picture

The term 'picture' is somewhat of a misnomer, and can mislead the reader into thinking that

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1 The story was first recounted by von Wright in “Ludwig Wittgenstein, A Biographical Sketch” in Phil Review 64 (4) 1955: p. 532-3
2 Notebooks 1914-16 p. 7
3 biographical sketch op cit. p. 533 Emphasis in original
4 “I have inherited this concept of a picture from two sides: first from a drawn picture, second from the model of a mathematician, which already is a general concept. For the mathematician talks of picturing where a painter would no longer use this expression.” WVC, p. 185
Wittgenstein means literal 'pictures.' His point is not to assert that we have mental imagery of objects in front of the 'mind's eye.' Indeed, he explicitly notes that pictures are merely one of many possible means of representation. “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.” (4.014) As David Stern notes:

Wittgenstein used the German word 'Bild' to talk about the model, a term usually translated as “picture”; as a result, the theory of meaning it inspired is generally known as the picture theory. While both words cover such things as images, film, frames, drawings, and paintings, the idea of a three-dimensional model is more readily conveyed by the German word 'Bild' than the English “picture.”

The picture need not be two-dimensional, nor “picture” at all in the usual sense. The only thing required of a picture is that it has a logical form of representation which is identical with what it depicts (2.17-2.182).

What a Picture Does

Wittgenstein's central preoccupation here is linguistic meaning. On face value, there is no relation between the written word 'cat' and the object to which it refers. Nor, in the same way, between the dot on the map and the city it is representing. However, the picture theory in its general sense handles both of these puzzles. The world for Wittgenstein is composed of “facts” [Tatasche] (1.1). Facts are those that correspond to a given set of states of affairs of the world as it is, and a proposition is true when there exists such a fact which corresponds to the proposition, or false when there does not. A true proposition, in its fully analyzed logical form, consists of a concatenation of names (4.221) which stand in determinant logical relations to one another in the proposition.

In the proposition, each word corresponds to a simple object, and should picture the relations that inhere in “logical space” just as the picture does in physical space and time: “the elements of the picture stand, in the picture, for the objects . . . That the elements of the picture are combined with one another in a definite way, represents that the things are so combined with one another” (2.14-2.15). Since in the proposition, names which correspond to objects must occur in certain ways for the logic of the sentence to represent the world as it is, a proposition is to be determined true or false in relation to an existing state of affairs [Sachverhalt]. The picture is an intermediary between the expression and the Sachverhalt, the configuration of objects in the world. It expresses the sense of the proposition (2.221). When there is a correspondence between the objects-in-relation in both the picture and the world, then we say that the proposition being pictured is true; otherwise false. The picture 'carves up' logical space, as it were, into two halves: what it would be like for the picture to be true, and also what it would be like for the picture to be false in the world. Thus, it is this picturing relation that determines the sense of a genuine proposition. It is in this ability for language to represent the world that the proposition can serve as a “picture” or “model” of the world.

The relationship that holds between the picturing relation, on the contrary, need not be linguistic. Take two different representations: a map and a musical score. It is of the nature of the map

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6 And even if such a connection between 'cat' and the object to which it refers were somehow explained, one could ask what is common about 'cat' and 'gato' such that the words can refer to the same object.
7 Consider the parallel with Frege, where sense is the intermediary which fixes the reference of the word. So too does the picture serve this function for Wittgenstein.
8 It is important to note here that Wittgenstein did not claim that pictures actually have to be true. Bivalence, of both the picture and the proposition, is a necessary condition for making sense at all.
to have the spacial dimensions or relations between different features of the map in a discrete relation to actual spacial dimensions or relations. On the other hand, the musical score expresses a wholly different set of relations between pitch and temporal flow. However, not all relations between elements in a given representation need to have equal significance: the length of a spacial representation of a given note on the score does not correspond to its temporal dimension. Both are logical pictures, since both have a logic of representation.

2.1-2.141: “The picture is a fact,” (2.141) which presents “the existence or non-existence of states of affairs” in logical space (2.11). The picture serves as a model of reality (2.12) insofar as the elements of the picture are “the representatives of” or “stand for” [vertreten] objects in a logical way and manner (2.131, 2.14).

2.15-2.151: We have already been told (2.033) that form is the possibility of structure; this is echoed and elaborated upon in 2.15-2.151. The “form” of objects is the internal property of being able to unite with others into a state of affairs, and that they have done so united is the “structure” of the state of affairs. Here we are introduced to the same two aspects (now of the picture) which are defined in 2.15c. The connection of elements in the picture is its structure and its ability to connect in such and such way is the picture's form.

2.1511-2.1515: These are highly metaphorical passages which describe the correspondence between picture and the world. The picture “reaches right out to” reality, like “feelers” (2.1511, 2.1515). He remarks elsewhere that what he meant by this is that “the forms of entities are contained in the form of the proposition which is about these entities.” As, for example in measuring length, only the endpoints of the graduating lines are relevant in determining the property of length. If this determines the length-relationship, so too one must have a “pictorial relationship” in measuring reality: a correlation between the elements of the picture (specifically, its structure) and things (2.1514). This is an external property of the picture, which is necessary for its representational role—for a picture to be a true picture of something (2.1513).

2.16-2.171: Aside from the external correlation of elements of the picture to objects in the world, so too is there an internal relation which must be identical with reality, which Wittgenstein calls “pictorial form.” The form of the picture is its ability to be an adequate representation of the world (2.171). This form must be internal to be a picture, otherwise it would require an external convention in order to interpret the picture (a picture of a picture) and so on (infinite regress!).

2.172-2.18: One thing that the picture cannot represent is its own pictorial form. If it could, the picture of the form would have to be outside the picture, which is absurd (2.174). However, the picture does display its own form in the process of representing reality. This is closely linked to Wittgenstein's doctrine of showing and saying. Note that 2.16, 2.17 and 2.18 form a continued train of thought.

2.181-2.2: One can here differentiate different types of pictures. If the pictorial form happens to be logically based, then one can properly call it a logical picture. All pictures are logical pictures in the sense that Wittgenstein talks about them, although not all logical pictures are, e.g., spacial pictures.

2.201-2.22: These passages expand a bit upon what has transpired already. The external relation of isomorphism between the elements of the picture and the objects in reality is what makes the picture

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9 Even with maps there is some ambiguity. Consider a highway map—that relates spacial dimensions accurately—versus a subway map, where the distance on the map does not accurately express the true distance from station to station.

10 “Some Remarks on Logical Form” p. 169; PO p, 34
true or false (2.21). There is also an internal relation between the two which is identical (not merely isomorphic) that is required for it to be a representation at all—regardless of its truth or falsity. Consider 2.21 and 2.22 in apposition, the former external relation being the subject of 2.21, whereas the latter is the subject of 2.22

2.221-2.225: The sense of a proposition is independent of its truth and falsity. The picture tells us what it would be like for a proposition to be true, and its agreement or disagreement with reality tells us whether it is true or false (2.222). Finally, there is no such thing as an a priori true picture. Propositions such as tautologies and contradictions which do not “carve up” logical space do not express a sense—they tell us nothing about what would need to be the case for the picture to be true.

4.01-4.016: These passages treat the proposition as a picture, and are relevant for understanding the expansion of the picture theory through the 4's in relation to linguistic meaning. The ability of a hearer to understand a proposition one has never heard before (e.g., 'Brommage has a silent gnome') is proof to Wittgenstein that the meaning of a sentence is a function of its most basic parts (4.02). Perhaps the most crucial passages are those that speak of pictures as forms of representation rather than as literal pictures—evidence that Wittgenstein did not mean pictures in the literal sense, but that things such as the musical score, the grooves on a record, and the sound an orchestra makes are all internally related, and inter-translatable (4.014 – 4.0141).