

Ludwig Wittgenstein

Tractatus Logico-Philosophicus

Translated by D. F. Pears and B. F. McGuinness With an introduction by Bertrand Russell



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TRANSLATORS' PREFACE

This edition contains an English translation of Ludwig Wittgenstein's *Logisch-Philosophische Abhandlung*, which first appeared in 1921 in the German periodical *Annalen der Naturphilosophie*. An earlier English translation made by C. K. Ogden with the assistance of F. P. Ramsey appeared in 1922 with the German text printed en face. The present translation was published in 1961, also with the German text. It has now been revised in the light of Wittgenstein's own suggestions and comments in his correspondence with C. K. Ogden about the first translation. This correspondence has now been published by Professor G. H. von Wright (Blackwell, Oxford, and Routledge & Kegan Paul, London and Boston, 1972).

Bertrand Russell's introduction to the edition of 1922 has been reprinted with his permission. The translations it contains, which are those of Russell himself or of the first English translator, have been left unaltered.

1974

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Dedicated to the memory of
my friend David H. Pinsent

谨以此书

纪念我的朋友大卫·宾森特

Motto: . . . and whatever a man knows, whatever is not mere rumbling and roaring that he has heard, can be said in three words.

Kürnberger

题句：……人们所知道的而不仅仅是从呼噪喧嚣中听来的一切，
都可以用三个词说出来。

瞿伦贝尔格

PREFACE

Perhaps this book will be understood only by someone who has himself already had the thoughts that are expressed in it—or at least similar thoughts.—So it is not a textbook.—Its purpose would be achieved if it gave pleasure to one person who read and understood it.

本书或许只能为那些自己就曾思考过这里所表达的思想或类似的思想的人所理解。——因此它不是一本教科书。——如果它能给一个读懂它的人以快乐，本书的目的就达到了。

The book deals with the problems of philosophy, and shows, I believe, that the reason why these problems are posed is that the logic of our language is misunderstood. The whole sense of the book might be summed up in the following words: what can be said at all can be said clearly, and what we cannot talk about we must pass over in silence.

本书讨论哲学问题，而且我相信它指出了这些问题都是由于误解我们的语言的逻辑而提出来的。本书的全部旨义可概述如下：凡是可说的东西，都可以明白地说，凡是不可说的东西，则必须对之沉默。

Thus the aim of the book is to draw a limit to thought, or rather—not to thought, but to the expression of thoughts: for in order to be able to draw a limit to thought, we should have to find both sides of the limit thinkable (i.e. we should have to be able to think what cannot be thought). /3/

因此本书是要为思维划一条界限，或者说得更确切些，不是为思维而是为思维的表达式划一条界限。因为要为思维划一条界限，我们就必须能思及这个界限的两边（也就是说，我们必须能思不可思者）。

It will therefore only be in language that the limit can be drawn, and what lies on the other side of the limit will simply be nonsense.

因此只能在语言中划界限，而在界限那一边的东西则根本是无意义的。

I do not wish to judge how far my efforts coincide with those of other philosophers. Indeed, what I have written here makes no claim to novelty in detail, and the reason why I give no sources is that it is a matter of indifference to me whether the thoughts that I have had have been anticipated by someone else.

我无意评断我的努力探求在多大程度上与其他哲学家是一致的。的确，我并不自诩这里所写的东西在细节上有何新颖之处；我也没有说明我的思想的来源，因为我所思考的东西在我之前是否已有他人思考过，对我来说是无所谓的。

I will only mention that I am indebted to Frege's great works and to the writings of my friend Mr Bertrand Russell for much of the stimulation of my thoughts.

我只想提到，对我思想的激励大都得之于弗雷格的伟著和我的朋友罗素先生的著作。

If this work has any value, it consists in two things: the first is that thoughts are expressed in it, and on this score the better the thoughts are expressed—the more the nail has been hit on the head—the greater will be its value.—Here I am conscious of having fallen a long way short of what is possible. Simply because my powers are too slight for the accomplishment of the task.—May others come and do it better.

如果本书有一种价值的话，那么其价值在如下两点。首先，【187】本书表达了一些思想，这些思想表达得愈好，愈能切中要害，其价值也愈大。——这里我自知与可能达到的地步还相距甚远。这只是因为我的能力至为薄弱，不堪胜任这个任务。——但愿有别人来做得更好些。

On the other hand the truth of the thoughts that are here communicated seems to me unassailable and definitive. I therefore believe myself to have found, on all essential points, the final solution of the problems. And if I am not mistaken in this belief, then the second thing in which the value of this work consists is that it shows how little is achieved when these problems are solved.

反之，这里所陈述的思想的真理性，在我看来则是无可置疑和断然确定的。因此，我认为，问题已经在根本上彻底解决了。如果我在这一点上没有弄错的话，那么本书的价值其次就在于，它指出通过这些问题的解决所完成的東西是如何的少。

L.W Vienna, 1918 /4/

路·维，1918年，维也纳【188】

1¹ The world is all that is the case.

1² 世界是所有发生的事情。

1.1 The world is the totality of facts, not of things.

1.1 世界是事实的总和，而非事物的总和。

1.11 The world is determined by the facts, and by their being all the facts.

1.11 世界是由事实规定的，是由此诸事实即是所有的事实这一点规定的。

1.12 For the totality of facts determines what is the case, and also whatever is not the case.

1.12 因为事实的总和既规定了发生的事情，也规定了所有未发生的事情。

1.13 The facts in logical space are the world.

1.13 逻辑空间中的诸事实就是世界。

1.2 The world divides into facts.

1.2 世界分成诸事实。

1.21 Each item can be the case or not the case while everything else remains the same.

1.21 一件事情可以是发生了的或未发生的，而其余的一切仍保持不变。

2 What is the case—a fact—is the existence of states of affairs.

2 发生的事情，即事实，是诸事态的存在。

2.01 A state of affairs (a state of things) is a combination of objects (things). /5/

2.01 事态是诸对象（物，事物）的一种结合。

2.011 It is essential to things that they should be possible constituents of states of affairs.

2.011 能成为事态的构成部分，是事物的本质。

2.012 In logic nothing is accidental: if a thing can occur in a state of affairs, the possibility of the state of affairs must be written into the thing itself.

2.012 在逻辑中没有任何东西是偶然的：如果一事物能在一事态中出现，那么这一事态的可能性必已预先设定于这一事物中。

2.0121 It would seem to be a sort of accident, if it turned out that a situation would fit a thing that could already exist entirely on its own.

If things can occur in states of affairs, this possibility must be in them from the beginning.

(Nothing in the province of logic can be merely possible. Logic deals with every possibility and all possibilities are its facts.)

Just as we are quite unable to imagine spatial objects outside space or temporal objects outside time, so too there is no object that we can imagine excluded from the possibility of combining with others.

If I can imagine objects combined in states of affairs, I cannot imagine them excluded from the possibility of such combinations.

2.0121 如果一个事况是在事后才去适合一个能独立自在的事物的，【189】那么这似乎就是一种偶然出现的事情了。

如果事物能够在事态中出现，那么这种可能性必已存在于事物之中。

（逻辑的东西不会仅仅是可能的。逻辑研究每一可能性，一切可能性都是它的事实。）

正如我们根本不可能离开空间去想像空间的对象，离开时间去想像时间的对象，我们也不可能在与其他对象联系的可能性之外去想像任何对象。

如果我能在事态的联系中想像一个对象，那么我就不可能在这种联系的可能性之外去想像这个对象。

¹ The decimal numbers assigned to the individual propositions indicate the logical importance of the propositions, the stress laid on them in my exposition. The propositions n.1, n.2, n.3, etc. are comments on proposition no. n; the propositions n.m1, n.m2, etc. are comments on proposition no. n.m; and so on.

² 书中各命题的十进制数码表示这些命题在逻辑上是重要的，我要着重加以阐述。n1, n2, n3等等是对属于数码n.m的命题的评注；n.m1, n.m2则是对属于数码n.m的命题的评注；如此等等。

2.0122 Things are independent in so far as they can occur in all possible situations, but this form of independence is a form of connexion with states of affairs, a form of dependence. (It is impossible for words to appear in two different roles: by themselves, and in propositions.)

2.0122 就其能在一切可能的事况中出现而言，事物是独立的，但是这种独立的形式乃是一种与事态相联系的形式，一种依存的形式。（语词不可能以两种不同的方式出现：单独出现和在命题中出现。）

2.0123 If I know an object I also know all its possible occurrences in states of affairs.

(Every one of these possibilities must be part of the nature of the object.)

A new possibility cannot be discovered later.

2.0123 如果我知道一个对象，我也就知道它在事态中出现的一切可能性。

（每一个这样的可能性必然就在对象的本性之中。）

新的可能性不可能是后来才发现的。

2.01231 If I am to know an object, though I need not know its external properties, I must know all its internal properties. /6/

2.01231 要知道一个对象，我不必知道它的外在特性，但是我必须知道它的一切内在特性。

2.0124 If all objects are given, then at the same time all *possible* states of affairs are also given.

2.0124 假定一切对象为已知，那么由此也就已知一切可能的事态。

2.013 Each thing is, as it were, in a space of possible states of affairs. This space I can imagine empty, but I cannot imagine the thing without the space.

2.013 每个事物都可以说是在一个可能事态的空间中。我可以想像这个空间是空的，但是不能想像不在空间中的事物。

2.0131 A spatial object must be situated in infinite space. (A spatial point is an argument-place.)

A speck in the visual field, though it need not be red, must have some colour: it is, so to speak, surrounded, by colour-space. Notes must have some pitch, objects of the sense of touch some degree of hardness, and so on.

2.0131 空间对象必处于无限空间之内（空间点就是一个主目位置）。

视野上的一个斑块不必是红的，但是它必有一种颜色；【190】可以说它被颜色空间围绕着的。音调必有某一高度，触觉对象必有某一硬度，如此等等。

2.014 Objects contain the possibility of all situations.

2.014 对象包含着一切事况的可能性。

2.0141 The possibility of its occurring in states of affairs is the form of an object.

2.0141 对象在事态中出现的可能性就是对象的形式。

2.02 Objects are simple.

2.02 对象是简单的。

2.0201 Every statement about complexes can be resolved into a statement about their constituents and into the propositions that describe the complexes completely.

2.0201 每个关于复合物的陈述都可以分析为关于其组成部分的陈述，分析为完全地描述了复合物的那些命题。

2.021 Objects make up the substance of the world. That is why they cannot be composite.

2.021 对象构成世界的实体。因此它们不可能是组合成的。

2.0211 If the world had no substance, then whether a proposition had sense would depend on whether

another proposition was true.

2.0211 如果世界没有实体，那么一个命题有无意义就要取决于另一个命题是不是真的了。

2.0212 In that case we could not sketch any picture of the world (true or false).

2.0212 如果这样，要勾画出一幅世界的图像（真的或假的）就是不可能的。

2.022 It is obvious that an imagined world, however different it may be from the real one, must have something—a form—in common with it.

2.022 显然，即使一个与实在的世界极其不同的想像的世界，也必然与实在的世界有某种共同的东西——一种形式。

2.023 Objects are just what constitute this unalterable form. /7/

2.023 这种固定的形式正是由对象构成的。

2.0231 The substance of the world can only determine a form, and not any material properties. For it is only by means of propositions that material properties are represented— only by the configuration of objects that they are produced.

2.0231 世界的实体只能规定一种形式，而不能规定任何实质的特性。因为后者只能通过命题来表现，只能由对象的配置而成。

2.023 In a manner of speaking, objects are colourless.

2.0232 附带说一下，对象是无色的。

2.0233 If two objects have the same logical form, the only distinction between them, apart from their external properties, is that they are different.

2.0233 两个具有相同逻辑形式的对象，除了它们的外在特性不同之外，其所以互相有别只是由于它们是不同的对象。

2.02331 Either a thing has properties that nothing else has, in which case we can immediately use a description to distinguish it from the others and refer to it; or, on the other hand, there are several things that have the whole set of their properties in common, in which case it is quite impossible to indicate one of them.

For if there is nothing to distinguish a thing, I cannot distinguish it, since otherwise it would be distinguished after all.

2.02331 或者一个事物具有其他任何事物所没有的特性，从而我们可以直接通过一种描述使它从其他事物中突显出来并把它指出来；或者有若干事物，它们的一切特性都是共同的，从而根本不可能指出其中的任何一个事物。

因为如果没有任何东西能使一个事物明白显现出来，那么我就不可能把它明辨出来，因为否则它就会明白显现出来了。【191】

2.024 Substance is what subsists independently of what is the case.

2.024 实体是独立于发生的事情而存在的东西。

2.025 It is form and content.

2.025 它是形式和内容。

2.0251 Space, time, and colour (being coloured) are forms of objects.

2.0251 空间、时间和颜色（有色性）是对象的形式。

2.026 There must be objects, if the world is to have an unalterable form.

2.026 只有对象存在，才可能有世界的固定形式。

2.027 Objects, the unalterable, and the subsistent are one and the same.

2.027 固定的东西，常住的东西和对象是同一个东西。

2.0271 Objects are what is unalterable and subsistent; their configuration is what is changing and unstable.

2.0271 对象是固定的东西，常住的东西；配置是变动不居的东西。

2.0272 The configuration of objects produces states of affairs. /8/

2.0272 对象的配置构成事态。

2.03 In a state of affairs objects fit into one another like the links of a chain.

2.03 在事态中，对象犹如一条链子上的诸环节那样互相衔接。

2.031 In a state of affairs objects stand in a determinate relation to one another.

2.031 在事态中，对象以一定的方式互相联系。

2.032 The determinate way in which objects are connected in a state of affairs is the structure of the state of affairs.

2.032 对象在事态中相互联系的方式就是事态的结构。

2.033 Form is the possibility of structure.

2.033 形式是结构的可能性。

2.034 The structure of a fact consists of the structures of states of affairs.

2.034 事实的结构是由事态的结构所构成的。

2.04 The totality of existing states of affairs is the world.

2.04 存在的事态的总和就是世界。

2.05 The totality of existing states of affairs also determines which states of affairs do not exist.

2.05 存在的事态的总和也规定了哪些事态不存在。

2.06 The existence and non-existence of states of affairs is reality.

(We also call the existence of states of affairs a positive fact, and their non-existence a negative fact.)

2.06 事态的存在与非存在就是实在。

(我们也称事态的存在为正的事实，事态的非存在为负的事实。)

2.061 States of affairs are independent of one another.

2.061 事态是彼此独立的。

2.062 From the existence or non-existence of one state of affairs it is impossible to infer the existence or non-existence of another.

2.062 从一个事态的存在或非存在不可能推出另一事态的存在或非存在。

2.063 The sum-total of reality is the world.

2.063 全部的实在就是世界。

2.1 We picture facts to ourselves.

2.1 我们给自己绘制事实的图像。

2.11 A picture presents a situation in logical space, the existence and non-existence of states of affairs.

2.11 图像表现逻辑空间中的事况，即事态的存在与非存在。

2.12 A picture is a model of reality.

2.12 图像是实在的一个模型。

2.13 In a picture objects have the elements of the picture corresponding to them. /9/

2.13 在图像中图像的成分与对象相对应。【192】

2.131 In a picture the elements of the picture are the representatives of objects.

2.131 在图像中图像的成分代表对象。

2.14 What constitutes a picture is that its elements are related to one another in a determinate way.

2.14 图像之成为图像在于其诸成分以一定的方式互相联系。

2.141 A picture is a fact.

2.141 图像是一事实。

2.15 The fact that the elements of a picture are related to one another in a determinate way represents that things are related to one another in the same way.

Let us call this connexion of its elements the structure of the picture, and let us call the possibility of this structure the pictorial form of the picture.

2.15 图像以一定的方式互相联系，这表明事物也是这样互相联系的。

图像成分的这种联系称为图像的结构，这种结构的可能性称为图像的摹绘形式。

2.151 Pictorial form is the possibility that things are related to one another in the same way as the elements of the picture.

2.151 摹绘形式是事物如图像的成分那样互相联系的可能性。

2.1511 That is how a picture is attached to reality; it reaches right out to it.

2.1511 图像就是这样与实在联系起来的；它伸展到实在。

2.1512 It is laid against reality like a measure.

2.1512 图像有如一把用以衡量实在的尺子。

2.15121 Only the end-points of the graduating lines actually touch the object that is to be measured.

2.15121 只有分度线的终点才接触到所要衡量的对象。

2.1513 So a picture, conceived in this way, also includes the pictorial relationship, which makes it into a picture.

2.1513 因而照这种看法，使图像成为图像的那种摹绘关系也还是属于图像的。

2.1514 The pictorial relationship consists of the correlations of the picture's elements with things.

2.1514 摹绘关系是由图像的成分和事物的相互对置关系构成的。

2.1515 These correlations are, as it were, the feelers of the picture's elements, with which the picture touches reality.

2.1515 这种相互对置关系仿佛是图像成分的触角，图像即以此接触实在。

2.16 If a fact is to be a picture, it must have something in common with what it depicts.

2.16 事实要成为图像，必须与被摹绘者有某种共同的东西。

2.161 There must be something identical in a picture and what /10/ it depicts, to enable the one to be a picture of the other at all.

2.161 在图像和被摹绘者中必有某种相同的东西，由此前者才能成为后者的图像。

2.17 What a picture must have in common with reality, in order to be able to depict it—correctly or incorrectly—in the way it does, is its pictorial form.

2.17 图像为了能以其自己的方式正确地或错误地摹绘实在而必须与实在共同具有的东西就是它的摹绘形式。

2.171 A picture can depict any reality whose form it has.

A spatial picture can depict anything spatial, a coloured one anything coloured, etc.

2.171 图像能摹绘其形式为图像具有的任何实在。

空间图像能摹绘一切空间的东西，颜色图像能摹绘一切有色的东西。【193】

2.172 A picture cannot, however, depict its pictorial form: it displays it.

2.172 但是图像不能摹绘它的摹绘形式，而是显示它。

2.173 A picture represents its subject from a position outside it. (Its standpoint is its representational form.) That is why a picture represents its subject correctly or incorrectly.

2.173 图像从外部表现其对象（图像的着眼点就是图像的表现形式），因此图像正确地或错误地表现其对象。

2.174 A picture cannot, however, place itself outside its representational form.

2.174 但是图像不可能置身于其表现形式之外。

2.18 What any picture, of whatever form, must have in common with reality, in order to be able to depict it—correctly or incorrectly—in any way at all, is logical form, i.e. the form of reality.

2.18 不论什么形式的图像为了毕竟能够（正确地或错误地）摹绘实在而必须与实在共同具有的东西就是逻辑形式，即实在的形式。

2.181 A picture whose pictorial form is logical form is called a logical picture.

2.181 如果摹绘形式是逻辑形式，那么图像就称为逻辑图像。

2.182 Every picture is at the same time a logical one. (On the other hand, not every picture is, for example, a spatial one.)

2.182 每个图像也就是一个逻辑图像。（反之，例如，并非每个图像都是空间图像。）

2.19 Logical pictures can depict the world.

2.19 逻辑图像能够摹绘世界。

2.2 A picture has logico-pictorial form in common with what it depicts.

2.2 图像与被摹绘者具有共同的逻辑的摹绘形式。

2.201 A picture depicts reality by representing a possibility of existence and non-existence of states of affairs. /11/

2.201 图像通过表现事态存在与非存在的可能性而摹绘实在。

2.202 A picture represents a possible situation in logical space.

2.202 图像表现逻辑空间中一个可能的事况。

2.203 A picture contains the possibility of the situation that it represents.

2.203 图像包含着它所表现的事况的可能性。

2.21 A picture agrees with reality or fails to agree; it is correct or incorrect, true or false.

2.21 图像与实在一致或不一致；它是正确的或不正确的，是真的或假的。

2.22 What a picture represents it represents independently of its truth or falsity, by means of its pictorial form.

2.22 图像，不论其真假，都通过摹绘形式表现其所表现者。

2.221 What a picture represents is its sense.

2.221 图像所表现的东西就是图像的意义。

2.222 The agreement or disagreement of its sense with reality constitutes its truth or falsity.

2.222 图像之为真为假，就在于它的意义与实在之一致或不一致。

2.223 In order to tell whether a picture is true or false we must compare it with reality.

2.223 要认出图像是真是假，我们必须把它与实在相比较。

2.224 It is impossible to tell from the picture alone whether it is true or false.

2.224 仅从图像本身是无法认出其为真为假的。

2.225 There are no pictures that are true a priori.

2.225 先天地真的图像是没有的。

3 A logical picture of facts is a thought.

3 事实的逻辑图像就是思想。【194】

3.001 'A state of affairs is thinkable': what this means is that we can picture it to ourselves.

3.001 “一个事态是可思的”，意即我们可以给自己绘制它的一个图像。

3.01 The totality of true thoughts is a picture of the world.

3.01 真的思想的总和就是一个世界的图像。

3.02 A thought contains the possibility of the situation of which it is the thought. What is thinkable is possible too.

3.02 思想包含着其所思的事况的可能性。凡是可思的，也就是可能的。

3.03 Thought can never be of anything illogical, since, if it were, we should have to think illogically.

3.03 我们不可能思任何非逻辑的东西，因为否则我们就不得不非逻辑地思了。

3.031 It used to be said that God could create anything except what would be contrary to the laws of logic.—The truth is that we could not say what an ‘illogical’ world would look like. /12/

3.031 人们曾说，上帝能创造一切，但不能创造任何违反逻辑规律的东西。——因为我们不可能说出一个“非逻辑的”世界会是怎样的。

3.032 It is as impossible to represent in language anything that ‘contradicts logic’ as it is in geometry to represent by its co-ordinates a figure that contradicts the laws of space, or to give the co-ordinates of a point that does not exist.

3.032 我们不可能用语言表现任何“与逻辑相抵触的”东西正如我们在几何学上不可能用坐标表现一个违反空间规律的图形，或者确定一个不存在的点的坐标。

3.0321 Though a state of affairs that would contravene the laws of physics can be represented by us spatially, one that would contravene the laws of geometry cannot.

3.0321 我们虽然能在空间上表现一个与物理学规律相抵触的事态，但是不可能在空间上表现一个与几何学规律相抵触的事态。

3.04 If a thought were correct a priori, it would be a thought whose possibility ensured its truth.

3.04 一个先天地正确的思想会是这样的一个思想，它的可能性就决定了它的真。

3.05 A priori knowledge that a thought was true would be possible only if its truth were recognizable from the thought itself (without anything to compare it with).

3.05 只有仅从一个思想本身（而无须有对象与之比较）就能认出它是真的，我们才能先天地知道这个思想是真的。

3.1 In a proposition a thought finds an expression that can be perceived by the senses.

3.1 在命题中，思想以可被感官感知的方式表达出来。

3.11 We use the perceptible sign of a proposition (spoken or written, etc.) as a projection of a possible situation.

The method of projection is to think of the sense of the proposition.

3.11 我们利用可被感官感知的命题指号（语音的或文字的，等等）作为可能的事况的投影。

投影的方法就是对命题意义的思。

3.12 I call the sign with which we express a thought a propositional sign.—And a proposition is a propositional sign in its projective relation to the world.

3.12 我们用以表达思想的那种指号，我称之为命题指号。命题在其对世界的投影关系上就是命题指号。

3.13 A proposition includes all that the projection includes, but not what is projected.

Therefore, though what is projected is not itself included, its possibility is.

A proposition, therefore, does not actually contain its sense, but does contain the possibility of expressing it.

(‘The content of a proposition’ means the content of a proposition that has sense.)

A proposition contains the form, but not the content, of its sense. /13/

3.13 所有属于投影的东西，都属于命题；但被投影的东西不属于命题。【195】

因此被投影的东西的可能性虽然属于命题，但是其自身却不属于命题。

因此命题的意义并不包含在命题中，命题所包含的乃是表达其意义的可能性。

（“命题的内容”意指有意义的命题的内容。）

命题中包含的是其意义的形式，不是其意义的内容。

3.14 What constitutes a propositional sign is that in it its elements (the words) stand in a determinate relation to one another.

A propositional sign is a fact.

3.14 命题指号之为命题指号在于其诸成分即诸语词是以一定的方式在其中互相联系着的。

命题指号是一种事实。

3.141 A proposition is not a blend of words.—(Just as a theme in music is not a blend of notes.)

A proposition is articulate.

3.141 命题不是语词的混合物。——（正如音乐的旋律不是音调的混合物。）

命题是清晰有节的。

3.142 Only facts can express a sense, a set of names cannot.

3.142 只有事实能表达一种意义，一些名字的集合并不能表达意义。

3.143 Although a propositional sign is a fact, this is obscured by the usual form of expression in writing or print.

For in a printed proposition, for example, no essential difference is apparent between a propositional sign and a word.

(That is what made it possible for Frege to call a proposition a composite name.)

3.143 平常书写或印刷的表达形式掩盖了命题之为一种事实。

因为，例如在印出来的命题中，看不出命题指号和语词有本质的区别。

因此弗雷格才会把命题称为组合名字。

3.1431 The essence of a propositional sign is very clearly seen if we imagine one composed of spatial objects (such as tables, chairs, and books) instead of written signs.

Then the spatial arrangement of these things will express the sense of the proposition.

3.1431 如果我们想像命题指号不是由书写指号而是由空间

对象（例如桌、椅、书）组合而成的，命题指号的本质就非常清楚了。

那时这些事物彼此的空间位置就表达了命题的意义。

3.1432 Instead of, ‘The complex sign “aRb” says that a stands to b in the relation R’, we ought to put, ‘That “a” stands to “b” in a certain relation says that aRb.’

3.1432 不是“复杂指号‘aRb’意指a和b有关系R”，而是“‘a’和‘b’有某种关系表示aRb”。

3.144 Situations can be described but not given names.

(Names are like points; propositions like arrows— they have sense.)

3.144 我们可以描述事况，但是不能为之命名。【196】

（名字类似于点，命题类似于箭矢，它们具有意义。）

3.2 In a proposition a thought can be expressed in such a way that elements of the propositional sign correspond to the objects of the thought.

3.2 在命题中，思想可以被如此表达而使命题指号的诸成分与思想的诸对象相对应。

3.201 I call such elements 'simple signs', and such a proposition 'completely analysed'. /14/

3.201 这些成分我称之为“简单指号”，而称这种命题为“被完全分析了”。

3.202 The simple signs employed in propositions are called names.

3.202 命题中所使用的简单指号叫做名字。

3.203 A name means an object. The object is its meaning. ('A' is the same sign as 'A'.)

3.203 名字意谓对象。对象是它的意谓。（“A”与“A”是同一个指号。）

3.21 The configuration of objects in a situation corresponds to the configuration of simple signs in the propositional sign.

3.21 简单指号在命题中的配置，与对象在事况中的配置相对应。

3.22 In a proposition a name is the representative of an object.

3.22 名字在命题中代表对象。

3.221 Objects can only be named. Signs are their representatives. I can only speak about them: I cannot put them into words. Propositions can only say how things are, not what they are.

3.221 我只能为对象命名。指号代表对象，我只能说到它，却不能把它说出来。一个命题只能说一个事物如何，而不能说它是何。

3.23 The requirement that simple signs be possible is the requirement that sense be determinate.

3.23 简单指号成为可能的必要条件就是意义得以确定的必要条件。

3.24 A proposition about a complex stands in an internal relation to a proposition about a constituent of the complex.

A complex can be given only by its description, which will be right or wrong. A proposition that mentions a complex will not be nonsensical, if the complex does not exist, but simply false.

When a propositional element signifies a complex, this can be seen from an indeterminateness in the propositions in which it occurs. In such cases we know that the proposition leaves something undetermined. (In fact the notation for generality contains a prototype.)

The contraction of a symbol for a complex into a simple symbol can be expressed in a definition.

3.24 关于复合物的命题与关于复合物的成分的命题有内在关系。

只有通过对复合物的描述才能把它提供给人们，这种描述与复合物相符或不相符。如果一个复合物不存在，那么谈到它的命题并不是无意义的，而纯然是假的。

一个命题成分指称一个复合物，这一点从包含该成分的命题的一种不确定性即可看出。我们知道，这个命题还没有把一切都规定了。（概括性指号的确包含着一个元图像。）

一个复合物的符号之简约为一个简单符号，可用一个定义来表达。【197】

3.25 A proposition has one and only one complete analysis.

3.25 对命题有一个而且只有一个完全的分析。

3.251 What a proposition expresses it expresses in a /15/ determinate manner, which can be set out clearly: a proposition is articulate.

3.251 命题以确定的可明白指出的方式表达它所表达的东西：命题是清晰有节的。

3.26 A name cannot be dissected any further by means of a definition: it is a primitive sign.

3.26 名字不可能用定义继续分析下去：它是一种初始指号。

3.261 Every sign that has a definition signifies via the signs that serve to define it; and the definitions point the way.

Two signs cannot signify in the same manner if one is primitive and the other is defined by means of primitive signs. Names cannot be anatomized by means of definitions. (Nor can any sign that has a meaning independently and on its own.)

3.261 每个被定义的指号都通过用以定义它的那些指号进行指称；而定义则指示了途径。

一个初始指号和一个由初始指号定义的指号，这两种指号是不可能以同一方式进行指称的。我们不可能用定义把名字分解开来。（任何独自具有一种意谓的指号都不可能这样加以分解。）

3.262 What signs fail to express, their application shows. What signs slur over, their application says clearly.

3.262 指号的使用把它们所未表达的东西显示出来。指号的使用把它们所隐含的东西说出来。

3.263 The meanings of primitive signs can be explained by means of elucidations. Elucidations are propositions that contain the primitive signs. So they can only be understood if the meanings of those signs are already known.

3.263 初始指号的意谓可通过阐释来说明。阐释是包含初始指号的命题。因而仅当这些指号的意谓为已知，它们才能被理解。

3.3 Only propositions have sense; only in the nexus of a proposition does a name have meaning.

3.3 惟独命题具有意义；惟独在命题的关联中，一个名字才具有意谓。

3.31 I call any part of a proposition that characterizes its sense an expression (or a symbol).

(A proposition is itself an expression.)

Everything essential to their sense that propositions can have in common with one another is an expression. An expression is the mark of a form and a content.

3.31 命题中表示其意义特征的每个部分，我都称之为一个表达式（一个符号）。

（命题本身就是一个表达式。）

表达式是诸命题彼此能共同具有而为其意义所绝对必要的一切。

表达式是一个形式和一个内容的标记。

3.311 An expression presupposes the forms of all the propositions in which it can occur. It is the common characteristic mark of a class of propositions.

3.311 表达式以它能在其中出现的一切命题的形式为前提。它是一类命题所共有的富于特征的标记。

3.312 It is therefore presented by means of the general form of the propositions that it characterizes. /16/

In fact, in this form the expression will be constant and everything else variable.

3.312 因此表达式是通过它所标志其特征的那些命题的一般形式来表示的。【198】

而且在这个形式中，表达式是常项，其余一切都是变项。

3.313 Thus an expression is presented by means of a variable whose values are the propositions that contain the expression.

(In the limiting case the variable becomes a constant, the expression becomes a proposition.)

I call such a variable a 'propositional variable'.

3.313 因此一个表达式是用一个变项来表示的，变项的值是包含这个表达式的命题。
(在极限情形中，变项变成常项，表达式变成命题。)我把这样一种变项称为“命题变项”。

3.314 An expression has meaning only in a proposition. All variables can be construed as propositional variables. (Even variable names.)

3.314 只有在命题中表达式才具有意义。每个变项都可看做命题变项。
(甚至变名也可看做命题变项。)

3.315 If we turn a constituent of a proposition into a variable, there is a class of propositions all of which are values of the resulting variable proposition. In general, this class too will be dependent on the meaning that our arbitrary conventions have given to parts of the original proposition. But if all the signs in it that have arbitrarily determined meanings are turned into variables, we shall still get a class of this kind. This one, however, is not dependent on any convention, but solely on the nature of the proposition. It corresponds to a logical form—a logical prototype.

3.315 如果我们将一个命题的一个组成部分换成变项，就得到一类命题，它们是如此产生的变项命题的全部的值。一般而言，这个命题的类仍然有赖于原来那个命题的诸部分根据任意约定所意指的东西。但是，如果我们将其意义被任意规定的那些指号全都换成变项，我们还会得到这样一个类。不过，这个类则无赖于任何约定，而仅仅取决于命题的本性，它相当于一种逻辑形式，一种逻辑元图像。

3.316 What values a propositional variable may take is something that is stipulated.
The stipulation of values is the variable.

3.316 命题变项可取何值，是被规定的了。
值的规定就是变项。

3.317 To stipulate values for a propositional variable is to give the propositions whose common characteristic the variable is.

The stipulation is a description of those propositions.

The stipulation will therefore be concerned only with symbols, not with their meaning.

And the only thing essential to the stipulation is that it is merely a description of *symbols* and states nothing about what is signified. /17/

How the description of the propositions is produced is not essential.

3.317 对命题变项的值的的规定就是将以变项为其共同标记的那些命题陈述出来。

规定是对这些命题的一种描述。因此规定只关乎符号而不涉及其意义。

对于规定惟一具有本质重要性的是：它只是对符号的一种描述，而对其所指则毫无所说。如何产生对命题的描述，是不重要的。

3.318 Like Frege and Russell I construe a proposition as a function of the expressions contained in it.

3.318 像弗雷格和罗素一样，我也把命题看做包含在命题中的表达式的函项。【199】

3.32 A sign is what can be perceived of a symbol.

3.32 指号是符号中可被感官感知的东西。

3.321 So one and the same sign (written or spoken, etc.) can be common to two different symbols—in which case they will signify in different ways.

3.321 因此两个不同的符号可以彼此共同具有同一个指号（文字指号或语音指号等等）——在这种情况下，它们是以不同的方式进行指称的。

3.322 Our use of the same sign to signify two different objects can never indicate a common characteristic of the two, if we use it with two different modes of signification. For the sign, of course, is arbitrary. So we could choose two different signs instead, and then what would be left in common on the signifying side?

3.322 我们用同一个指号而以不同的指称方式指称两个对象，是绝不可能指出二者的共同特征的。因为指号乃是任意的。因此我们也可以选择两个不同的指号，如果这样，在指称中哪里还会有共同的东西呢？

3.323 In everyday language it very frequently happens that the same word has different modes of signification—and so belongs to different symbols—or that two words that have different modes of signification are employed in propositions in what is superficially the same way.

Thus the word ‘is’ figures as the copula, as a sign for identity, and as an expression for existence; ‘exist’ figures as an intransitive verb like ‘go’, and ‘identical’ as an adjective; we speak of something, but also of something’s happening.

(In the proposition, ‘Green is green’—where the first word is the proper name of a person and the last an adjective—these words do not merely have different meanings: they are different symbols.)

3.323 在日常语言中，同一语词以不同方式进行指称，因而属于不同的符号，或者两个以不同方式进行指称的语词在命题中表面上却以相同的方式被使用，这些情况是极为常见的。

于是，“ist”（是）一词可用做系词，等号和存在词；“‘existieren’（存在）像“gehen”（走，去）一样用做不及物动词；“identisch”（同一的）用做形容词；我们谈到某物，但是也说某物发生。

（在命题“Grim ist grün（“格律恩是幼稚的”）中，头一个词是人名，末一个词是形容词，这两个词不仅有不同的意谓，而且是不同的符号。）

3.324 In this way the most fundamental confusions are easily produced (the whole of philosophy is full of them).

3.324 于是很容易发生最根本的混淆（全部哲学充满这种混淆）。

3.325 In order to avoid such errors we must make use of a /18/ sign-language that excludes them by not using the same sign for different symbols and by not using in a superficially similar way signs that have different modes of signification: that is to say, a sign-language that is governed by logical grammar—by logical syntax.

(The conceptual notation of Frege and Russell is such a language, though, it is true, it fails to exclude all mistakes.)

3.325 为了避免这些错误，我们必须使用这样一种指号语言，这种语言不用同一指号表示不同的符号，不以表面相同的方式使用以不同方式进行指称的指号，因而避免了混淆的错误。这也就是一种遵从逻辑语法—逻辑句法一的指号语言。

（弗雷格和罗素的概念文字就是这样一种语言，当然它也还未把一切错误都排除掉。）【200】

3.326 In order to recognize a symbol by its sign we must observe how it is used with a sense.

3.326 为了就指号认出符号，我们必须观察其有意义的使用。

3.327 A sign does not determine a logical form unless it is taken together with its logico-syntactical employment.

3.327 指号只有与其合乎逻辑句法的使用一起才决定一个逻辑形式。

3.328 If a sign is useless, it is meaningless. That is the point of Occam’s maxim.
(if everything behaves as if a sign had meaning, then it does have meaning)

3.328 一个指号不被使用，它就是无意谓的。奥康原则的意义即在于此。

（如果从一切情况来看，一个指号似乎具有意谓，那么它也就具有意谓。）

3.33 In logical syntax the meaning of a sign should never play a role. It must be possible to establish logical syntax without mentioning the meaning of a sign: only the description of expressions may be presupposed.

3.33 一个指号在意谓在逻辑句法中决不应起任何作用。我们可以撇开指号在意谓而制定出逻辑句法，它只须以对表达式的描述为前提。

3.331 From this observation we turn to Russell's 'theory of types'. It can be seen that Russell must be wrong, because he had to mention the meaning of signs when establishing the rules for them.

3.331 按照这个看法，我们再来看一看罗素的“类型论”。罗素的错误在于，他在制定指号规则时，不得不提到指号在意谓。

3.332 No proposition can make a statement about itself, because a propositional sign cannot be contained in itself (that is the whole of the 'theory of types').

3.332 任何命题都不可能述及自身，因为命题指号不可能包含于自身（这就是全部的“类型论”）。

3.333 The reason why a function cannot be its own argument is that the sign for a function already contains the prototype of its argument, and it cannot contain itself.

For let us suppose that the function $F(fx)$ could be its /19/ own argument: in that case there would be a proposition ' $F(F(fx))$ ', in which the outer function F and the inner function F must have different meanings, since the inner one has the form $\Phi(fx)$ and the outer one has the form $\Psi(\Phi(fx))$. Only the letter ' F ' is common to the two functions, but the letter by itself signifies nothing.

This immediately becomes clear if instead of ' $F(Fu)$ ' we write ' $(\exists \Phi):F(\Phi u) \cdot \Phi u = Fu$ '.

That disposes of Russell's paradox.

3.333 一个函项不可能是自身的主目，乃因为函项指号已经包含了其主目的元图像，而不可能包含其自身。

如果我们假定，函项 $F(fx)$ 可以是其自身的主目；这样就会有一个命题“ $F(F(fx))$ ”，其中外一层函项 F 和内一层函项 F 必然具有不同的意谓，因为内一层函项具有 $\Phi(fx)$ 的形式，外一层函项具有 $\Psi(\Phi(fx))$ 的形式。只有字母“ F ”是这两个函项共同的，但是它并不单独指称任何东西。

如果我们不是写做“ $F(Fu)$ ”，而是代之以“ $(\exists \Phi):F(\Phi u) \cdot \Phi u = Fu$ ”，这一点就立时变得明明白白了。由此就解决了罗素的悖论。

3.334 The rules of logical syntax must go without saying, once we know how each individual sign signifies.

3.334 我们只要知道每个指号是如何进行指称的，【201】逻辑句法的规则就必然是显而易见的。

3.34 A proposition possesses essential and accidental features.

Accidental features are those that result from the particular way in which the propositional sign is produced. Essential features are those without which the proposition could not express its sense.

3.34 命题有本质的特征和偶然的特征。

偶然的特征是由于命题指号的特殊的生成方式而得来的那些特征。本质的特征则是惟一使命题能表达其意义的那些特征。

3.341 So what is essential in a proposition is what all propositions that can express the same sense have in common.

And similarly, in general, what is essential in a symbol is what all symbols that can serve the same purpose have in common.

3.341 因此，命题中本质的东西是一切能表达相同意义的命题共同具有的东西。

同样地，符号中本质的东西一般地说就是一切可用于同一目的的符号共同具有的东西。

3.3411 So one could say that the real name of an object was what all symbols that signified it had in common. Thus, one by one, all kinds of composition would prove to be unessential to a name.

3.3411 因此我们可以说：真正的名字是一切指称对象的符号共同具有的东西。由此我们可以接连地得出一个结论：对名字来说，任何一种组合都不是本质必要的。

3.342 Although there is something arbitrary in our notations, this much is not arbitrary— that when we have determined one thing arbitrarily, something else is necessarily the case. (This derives from the essence of notation.)

3.342 在我们的记法中虽然有某种任意的东西，但是如果我们已经任意地规定了某种东西，那么就一定会出现某种别的东西，这一点却不是任意的。（这有赖于记法的本质。）

3.3421 A particular mode of signifying maybe unimportant but it is always important that it is a possible mode of signifying. And that is generally so in philosophy: again and /20/ again the individual case turns out to be unimportant, but the possibility of each individual case discloses something about the essence of the world.

3.3421 某一特殊的指称方式可能并不重要，但是，此系一种可能的指称方式这一点却永远是重要的。哲学上一般的情况是：个别的东西虽反复证明是不重要的，但是每一个别东西的可能性却给我们以关于世界本质的一种启示。

3.343 Definitions are rules for translating from one language into another. Any correct sign-language must be translatable into any other in accordance with such rules: it is this that they all have in common.

3.343 定义是一种语言翻译为他种语言的规则。任何正确的指号语言一定可以按照这样的规则翻译为任何他种语言：这是所有正确的指号语言共同具有的。

3.344 What signifies in a symbol is what is common to all the symbols that the rules of logical syntax allow us to substitute for it.

3.344 在一个符号中进行指称的东西是所有按照逻辑句法规则可用以替换这个符号的那些符号共同具有的东西。

3.3441 For instance, we can express what is common to all notations for truth-functions in the following way: they have in common that, for example, the notation that uses ‘ $\sim p$ ’ (‘not p ’) and ‘ $p \vee q$ ’ (‘ p or q ’) can be substituted for any of them.

(This serves to characterize the way in which something general can be disclosed by the possibility of a specific notation.)

3.3441 例如，我们可将真值函项的一切记法的共同点表达如下：【202】它们全都可代之以（例如）“ $\sim p$ ”（“非 p ”）和“ $p \vee q$ ”（“ p 或 q ”）的记法，这就是它们的共同点。

（某一特定的可能的记法如何会给我们以一般启示的方式已由此而表明其特征。）

3.3442 Nor does analysis resolve the sign for a complex in an arbitrary way, so that it would have a different resolution every time that it was incorporated in a different proposition.

3.3442 在分析复合物的指号时，并不是如此任意地加以分解，以致使它在每个命题结构中都有（比如说）一种不同的分解。

3.4 A proposition determines a place in logical space. The existence of this logical place is guaranteed by the mere existence of the constituents—by the existence of the proposition with a sense.

3.4 一个命题规定逻辑空间上的一个位置。这种逻辑位置的存在是仅由命题诸成分的存在、有意义的命题的存在就确证了的。

3.41 The propositional sign with logical co-ordinates—that is the logical place.

3.41 命题指号加逻辑坐标：这就是逻辑位置。

3.411 In geometry and logic alike a place is a possibility: something can exist in it.

3.411 几何位置和逻辑位置在这一点上是一致的，即二者都是一种存在的可能性。

3.42 A proposition can determine only one place in logical space: nevertheless the whole of logical space must already be given by it.

(Otherwise negation, logical sum, logical product, etc.; would introduce more and more new elements—in co-ordination.)

(The logical scaffolding surrounding a picture determines logical space. The force of a proposition reaches through the whole of logical space.)

3.42 虽然一个命题只能规定逻辑空间上的一个位置，但是整个逻辑空间必然这样由此命题而被给出。

(否则，通过否定、逻辑和、逻辑积等等，就总会在坐标上引进新的因素。)

(围绕着图像的逻辑构架规定逻辑空间。命题囊括整个逻辑空间。)

3.5 A propositional sign, applied and thought out, is a thought.

3.5 所用、所思的命题指号就是思想。

4 A thought is a proposition with a sense.

4 思想是有意义的命题。

4.001 The totality of propositions is language.

4.001 命题的总和就是语言。

4.002 Man possesses the ability to construct languages capable of expressing every sense, without having any idea how each word has meaning or what its meaning is—just as people speak without knowing how the individual sounds are produced.

Everyday language is a part of the human organism and is no less complicated than it.

It is not humanly possible to gather immediately from it what the logic of language is.

Language disguises thought. So much so, that from the outward form of the clothing it is impossible to infer the form of the thought beneath it, because the outward form of the clothing is not designed to reveal the form of the body, but for entirely different purposes.

The tacit conventions on which the understanding of everyday language depends are enormously complicated.

4.002 人具有构造语言的能力，可用语言表达任何意义而无须知道每个语词如何意谓和意谓什么。正如人即使不知道如何发出各个声音也能说话一样。

日常语言是人类机体的一部分，并不比机体的复杂性低。

人不可能从日常语言中直接获知语言逻辑。【203】

语言掩盖思想，而且掩盖得使人不可能根据衣服的外表形式推知被掩盖的思想的形式；因为衣服

的外表形式并不是为使人们能认出身体的形式，而是为了完全不同的目的设计的。

为了理解日常语言而形成的默默的约定是很复杂的。

4.003 Most of the propositions and questions to be found in philosophical works are not false but nonsensical. Consequently we cannot give any answer to questions of this /22/ kind, but can only point out that they are nonsensical. Most of the propositions and questions of philosophers arise from our failure to understand the logic of our language.

(They belong to the same class as the question whether the good is more or less identical than the beautiful.)

And it is not surprising that the deepest problems are in fact not problems at all.

4.003 有关哲学的东西所写的命题和问题大多并非谬误，而是无意义的。因此，我们根本不能回答这类问题，而只能明确指出其无意义性。哲学家的问题和命题大多是基于我们不了解我们的语言逻辑。

（它们都是诸如善比美更具同一性抑较少同一性之类的问题。）

毫不奇怪，最深刻的问题其实不成其为问题。

4.0031 All philosophy is a ‘critique of language’ (though not in Mauthner’s sense). It was Russell who performed the service of showing that the apparent logical form of a proposition need not be its real one.

4.0031 全部哲学乃是“语言批判”。（虽然不是毛特纳所说的那种批判。）罗素的功绩就是指出了：命题的表面的逻辑形式未必是它的真实的逻辑形式。

4.01 A proposition is a picture of reality.

A proposition is a model of reality as we imagine it.

4.01 命题是实在的一种图像。

正如我们所想像的那样，命题是实在的一种模型。

4.011 At first sight a proposition—one set out on the printed page, for example—does not seem to be a picture of the reality with which it is concerned. But neither do written notes seem at first sight to be a picture of a piece of music, nor our phonetic notation (the alphabet) to be a picture of our speech.

And yet these sign-languages prove to be pictures, even in the ordinary sense, of what they represent.

4.011 乍一看，命题——例如就像它印在纸上的这个样子——似乎并不是它所述及的实在的图像。但是乍一看，乐谱似乎也不是音乐的图像，我们的语音指号（字母）文字似乎也不是我们的口头语言的图像。

但是这些指号语言表明，即使在通常的意义上它们也是其所表现的东西的图像。

4.012 It is obvious that a proposition of the form ‘aRb’ strikes us as a picture. In this case the sign is obviously a likeness of what is signified.

4.012 显然，我们是把一个具有“aRb”形式的命题看做图像的。在这里指号显然是其所指的一个比喻。

4.013 And if we penetrate to the essence of this pictorial character, we see that it is not impaired by apparent irregularities (such as the use of # and b in musical notation).

For even these irregularities depict what they are intended to express; only they do it in a different way.

4.013 而且如果我们探究一下这种图像性的本质的东西，我们就会看到，这种图像性不会被表面的不规则性【204】（如乐谱中对#和b的使用）所扰乱。

因为即使这些不规则性也摹绘了它们所要表达的东西：只不过它们是以一种不同的方式来摹绘的。

4.014 A gramophone record, the musical idea, the written /23/ notes, and the sound-waves, all stand to one another in the same internal relation of depicting that holds between language and the world.

They are all constructed according to a common logical pattern.

(Like the two youths in the fairy-tale, their two horses, and their lilies. They are all in a certain sense one.)

4.014 留声机唱片、音乐思想、乐谱、声波，彼此都具有语言和世界间存在的那种摹绘的内在关系。

它们全都具有共同的逻辑结构。

(有如童话故事里讲的两个少年，他们的两匹马和他们的百合花。在某种意义上，他（它）们都是同一个。)

4.0141 There is a general rule by means of which the musician can obtain the symphony from the score, and which makes it possible to derive the symphony from the groove on the gramophone record, and, using the first rule, to derive the score again. That is what constitutes the inner similarity between these things which seem to be constructed in such entirely different ways. And that rule is the law of projection which projects the symphony into the language of musical notation. It is the rule for translating this language into the language of gramophone records.

4.0141 有一条普遍的规则，音乐家可借以从总谱奏出交响乐，由此人们可从留声机唱片的密纹上得出交响乐，并可根据最初的那条规则再推出总谱。这些显然完全不同的东西之具有内在的相似性，正在于此。那条规则是将交响乐投射于乐谱语言的投影律。那是将乐谱语言翻译为留声机唱片语言的规则。

4.015 The possibility of all imagery, of all our pictorial modes of expression, is contained in the logic of depiction.

4.015 一切比喻的可能性，我们的表达方式的全部图像性的可能性，都建立在摹绘的逻辑上。

4.016 In order to understand the essential nature of a proposition, we should consider hieroglyphic script, which depicts the facts that it describes.

And alphabetic script developed out of it without losing what was essential to depiction.

4.016 要了解命题的本质，我们可想想摹绘其所描述的事实的象形文字。

字母文字是从象形文字来的，但未失去摹绘的本质。

4.02 We can see this from the fact that we understand the sense of a propositional sign without its having been explained to us.

4.02 我们从下面这个事实就看到这一点，即无须向我们解释，我们就了解了命题指号的意义。

4.021 A proposition is a picture of reality: for if I understand a proposition, I know the situation that it represents. And I understand the proposition without: having had its sense explained to me. /24/

4.021 命题是实在的一个图像：因为我如果了解了一个命题，我就知道它所表现的事况。而且不向我解释这个命题的意义，我就能了解它。

4.022 A proposition shows its sense.

A proposition *shows* how things stand *if* it is true. And it *says* that they do so stand.

4.022 命题显示其意义。

命题显示当其为真时有怎样的情形，而且说情形就是如此。

4.023 A proposition must restrict reality to two alternatives: yes or no.

In order to do that, it must describe reality completely.

A proposition is a description of a state of affairs.

Just as a description of an object describes it by giving its external properties, so a proposition describes reality by its internal properties.

A proposition constructs a world with the help of a logical scaffolding, so that one can actually see from the proposition how everything stands logically if it is true. One can draw inferences from a false proposition.

4.023 实在必须通过命题以是或否加以确定。【205】

为此，它必须被命题完全地描述。命题是对一事态的描述。

正如对于一个对象是按其外在特性来描述的，命题对实在则是按其内在特性来描述的。

命题借助一种逻辑构架来构造一个世界，因此我们从命题也可以看到，当其为真时，所有逻辑的东西是怎样的情形。我们可以从一个假命题得出结论。

4.024 To understand a proposition means to know what is the case if it is true.

(One can understand it, therefore, without knowing whether it is true.)

It is understood by anyone who understands its constituents.

4.024 了解一个命题，意即知道当其为真时是什么情形。

(因此无须知道其是否为真，我们就能了解这个命题。)

当我们了解其诸成分时，我们就了解了这个命题。

4.025 When translating one language into another, we do not proceed by translating each proposition of the one into a proposition of the other, but merely by translating the constituents of propositions.

(And the dictionary translates not only substantives, but also verbs, adjectives, and conjunctions, etc.; and it treats them all in the same way.)

4.025 一种语言之翻译为另一种语言，不是把这种语言的每个命题都翻译为那种语言的命题，而是只把命题的成分翻译过去。

(词典不仅翻译名词，而且翻译动词、形容词和连接词，等等；而且对所有这些词都是同样处理的。)

4.026 The meanings of simple signs (words) must be explained to us if we are to understand them.

With propositions, however, we make ourselves understood. /25/

4.026 简单指号(词)的意谓必须加以解释，以使我们了解它们。

但是我们借助于命题就可以达到相互了解。

4.027 It belongs to the essence of a proposition that it should be able to communicate a new sense to us.

4.027 命题能传达给我们一种新的意义，这是命题的本质。

4.03 A proposition must use old expressions to communicate a new sense.

A proposition communicates a situation to us, and so it must be essentially connected with the situation.

And the connexion is precisely that it is its logical picture.

A proposition states something only in so far as it is a picture.

4.03 一个命题必须用旧的词语来传达一种新的意义。

命题传达给我们一个事况，因此命题在本质上必然与事况相联系。

而且这种联系正是命题之为事况的逻辑图像。命题仅就其为一图像而言，才有所陈述。

4.031 in a proposition a situation is, as it were, constructed by way of experiment.

Instead of, 'This proposition has such and such a sense', we can simply say, 'This proposition represents

such and such a situation’.

4.031 在命题中，一个事况仿佛是试验性地组合起来的。

我们可以干脆说：这个命题表现某某事况，而不说：这个命题具有某某意义。【206】

4.0311 One name stands for one thing, another for another thing, and they are combined with one another. In this way the whole group—like a tableau vivant—presents a state of affairs.

4.0311 一个名字代表一个事物，另一个名字代表另一个事物，而且它们是相互结合在一起的，而这个整体则有如一幅生动的图像如此表象着事态。

4.0312 The possibility of propositions is based on the principle that objects have signs as their representatives.

My fundamental idea is that the ‘logical constants’ are not representatives; that there can be no representatives of the logic of facts.

4.0312 命题之所以可能乃基于对象以指号为其代表的原则。

我的基本思想是：“逻辑常项”不代表任何东西。事实的逻辑不能为任何东西所代表。

4.032 It is only in so far as a proposition is logically articulated that it is a picture of a situation.

(Even the proposition, ‘Ambulo’, is composite: for its stem with a different ending yields a different sense, and so does its ending with a different stem.)

4.032 命题只有在逻辑上是清晰有节的，才是事况的图像。

（就连“Ambulo”这个命题也是一个复合命题，因为它的词干附以不同的词尾和它的词尾附于不同的词干，都会得出不同的意义。³）

4.04 In a proposition there must be exactly as many distinguishable parts as in the situation that it represents.

The two must possess the same logical (mathematical) /26/ multiplicity. (Compare Hertz’s *Mechanics* on dynamical models.)

4.04 命题及其表现的事况具有正好一样多须加以区别的部分。

二者必然具有相同的逻辑的（数学的）复多性。（参阅赫兹的《力学》论动力模型。）

4.041 This mathematical multiplicity, of course, cannot itself be the subject of depiction. One cannot get away from it when depicting.

4.041 我们当然不可能再摹绘这种数学的复多性本身。我们在摹绘时不可能超出这种复多性的范围。

4.0411 If, for example, we wanted to express what we now write as ‘(x).fx’ by putting an affix in front of ‘fx’—for instance by writing ‘Gen. fx’—it would not be adequate: we should not know what was being generalized. If we wanted to signalize it with an affix ‘_g’—for instance by writing ‘f(x_g)’—that would not be adequate either: we should not know the scope of the generality-sign.

If we were to try to do it by introducing a mark into the argument-pieces—for instance by writing ‘(G,G).F(G,G)’

—it would not be adequate: we should not be able to establish the identity of the variables. And so on.

All these modes of signifying are inadequate because they lack the necessary mathematical multiplicity.

³ Ambulo是拉丁文动同ambulare（走路，散步，徘徊，旅行）的第一人称单数现在时态，意为我（现在）走路、我（现在）散步等等。其词干若附以表示第二人称复数将来时态的词尾即成为ambulabitis，意为你们将走路，你们将散步等等。其词尾若附于别一词干，如corrogo（corrogare的第一人称单数现在时态），意为我（现在）请求，词尾与amblo虽然相同，却是两个不同的词，意义自然不同。——译者注

4.0411 如果（比如说）我们想通过在“fx”之前加一指标（例如“Alg.fx”⁴）的办法来表达我们用“(x).fx”表达的东西，那是不行的。我们会不知道被概括的是什么。如果我们欲以一指标“a”来表示这种概括性，例如“f(x_a)”，这也是不行的，我们会不知道概括性指号的范围。【207】

如果我们想在主目位置上引进一个记号，例如，“(A, AF(A, A))”来表达“(x).fx”所表达的东西，那也是不行的，我们会无法确定诸变项的同一性。等等。

所有的这些标示法都是不够的，因为它们都缺乏必要的数学的复多性。

4.0412 For the same reason the idealist's appeal to 'spatial spectacles' is inadequate to explain the seeing of spatial relations, because it cannot explain the multiplicity of these relations.

4.0412 出于同样的理由，唯心论者用“空间眼镜”解释空间关系视觉是不行的，因为这无法解释空间关系的复多性。

4.05 Reality is compared with propositions.

4.05 实在与命题相对照。

4.06 A proposition can be true or false only in virtue of being a picture of reality.

4.06 命题之所以可能是真的或假的，只是由于它是实在的一种图像。

4.061 It must not be overlooked that a proposition has a sense that is independent of the facts: otherwise one can easily suppose that true and false are relations of equal status between signs and what they signify.

In that case one could say, for example, that '*p*' /27/ signified in the true way what '~*p*' signified in the false way, etc.

4.061 如果不注意命题具有一种独立于事实的意义，那么我们会轻易相信，真和假是指号和所指间的同等并重的关系。

这样一来，例如，我们就会说，“*p*”是以真的方式标示“~*p*”以假的方式所标示的东西，等等。

4.062 Can we not make ourselves understood with false propositions just as we have done up till now with true ones?—So long as it is known that they are meant to be false.—No! For a proposition is true if we use *it* to say that things stand in a certain way, and they do; and if by '*p*' we mean ~*p* and things stand as we mean that they do, then, construed in the new way, '*p*' is true and not false.

4.062 只要我们知道假命题就是意指其为假的，那么，我们难道不能像迄今一直以真命题来取得互相理解那样也以假命题达到互相理解吗？不能！因为如果事情正如我们用命题所说的那样，这个命题就是真的；如果我们用“*p*”意指~*p*，而且事情正如我们所意指的那样，那么，按照这种新的理解，“*p*”就是真的而非假的。

4.0621 But it is important that the signs '*p*' and '~*p*' can say the same thing. For it shows that nothing in reality corresponds to the sign ~.

The occurrence of negation in a proposition is not enough to characterize its sense (~*p* = *p*).

The propositions '*p*' and '~*p*' have opposite sense, but there corresponds to them one and the same reality.

4.0621 但是，重要的是，指号“*p*”和“~*p*”能说同一件事情。因为它表明，在实在中并无任何东西与指号“~”相对应。

否定之出现于一个命题，这不是其意义(~*p*=*p*)的标记。【208】

命题“*p*”和“~*p*”具有相反的意义，但是，与它们相应的是同一个实在。

⁴ Alg.表示概括命题。——译者注

4.063 An analogy to illustrate the concept of truth: imagine a black spot on white paper: you can describe the shape of the spot by saying, for each point on the sheet, whether it is black or white. To the fact that a point is black there corresponds a positive fact, and to the fact that a point is white (not black), a negative fact. If I designate a point on the sheet (a truth-value according to Frege), then this corresponds to the supposition that is put forward for judgement, etc. etc.

But in order to be able to say that a point is black or white, I must first know when a point is called black, and when white: in order to be able to say, ‘“p” is true (or false)’, I must have determined in what circumstances I call ‘p’ true, and in so doing I determine the sense of the proposition.

Now the point where the simile breaks down is this: /28/ we can indicate a point on the paper even if we do not know what black and white are, but if a proposition has designated a thing (a truth-value) which might have properties called ‘false’ or ‘true’. The verb of a proposition is not ‘is true’ or ‘is false’, as Frege thought: rather, that which ‘is true’ must already contain the verb.

4.063 试对关于真的概念作一图解：在一张白纸上有一块黑斑；我们指出纸面上的每一个点是黑的还是白的，就能描绘出这块黑斑的形状。与一个点是黑的这个事实相应的是一正的事实，与一个点是白的（非黑的）这个事实相应的是一负的事实。如果我把纸面上的一个点（弗雷格所说的一个真值）标出来那么这就相当于一个被提出来以待判断的假设，等等，等等。

但是要能说出一个点是黑的还是白的，我们首先必须知道，在什么条件下我们把一个点称为黑的，又在什么条件下把它称为白的；要能说出“p”是真的（或是假的），我必已规定了，在什么情况下我称“p”为真，并从而规定了这个命题的意义。

上面这个比喻在下面一点上就不很恰当了：我们即使不知道什么是白和黑，也能指出纸上的一个点；但是一个没有意义的命题则根本没有任何东西与之相应，因为它并不标示一个其特性或可名之为“假”或“真”之物（真值）；一个命题的动词并不是（如弗雷格认为的那样）“是真的”或“是假的”，而是那个“是真的”东西必已包含了动词。

4.064 Every proposition must already have a sense: it cannot be given a sense by affirmation. Indeed its sense is just what is affirmed. And the same applies to negation, etc.

4.064 每个命题必然已经具有一种意义；肯定并不能给命题以意义，因为肯定所肯定者正是意义。否定等等，亦然如是。

4.0641 One could say that negation must be related to the logical place determined by the negated proposition.

The negating proposition determines a logical place different from that of the negated proposition.

The negating proposition determines a logical place with the help of the logical place of the negated proposition. For it describes it as lying outside the latter’s logical place.

The negated proposition can be negated again, and this in itself shows that what is negated is already a proposition, and not merely something that is preliminary to a proposition.

4.0641 我们可以说，否定已与否定命题所规定的逻辑位置有关。

否定命题与否定命题规定不同的逻辑位置。

否定命题借助于否定命题的逻辑位置来规定一个逻辑位置，【209】因为它是把后者作为处于前者之外的逻辑位置来描述的。

我们可以对被否定的命题再作否定，这已表明，被否定者已经是一个命题，而不仅仅是命题的准备。

4. 1 Propositions represent the existence and non-existence of states of affairs.

4.1 命题表现事态的存在和非存在。

4. 11 The totality of true propositions is the whole of natural science (or the whole corpus of the natural

sciences).

4.11 真命题的总和是全部自然科学（或各门自然科学的总和）。

4.111 Philosophy is not one of the natural sciences.

(The word 'philosophy' must mean something whose place is above or below the natural sciences, not beside them.)

（“哲学”这个词必是指某种超乎自然科学或低于自然科学而非与自然科学并列的东西。）

4.112 Philosophy aims at the logical clarification of thoughts.

Philosophy is not a body of doctrine but an activity. /29/

A philosophical work consists essentially of elucidations.

Philosophy does not result in 'philosophical propositions', but rather in the clarification of propositions.

Without philosophy thoughts are, as it were, cloudy and indistinct: its task is to make them clear and to give them sharp boundaries.

4.112 哲学的目的是对思想的逻辑澄清。

哲学不是一种学说，而是一种活动。

一部哲学著作本质上是由阐释构成的。

哲学的结果不是得到“哲学的命题”，而是对命题的澄清。

哲学应当把不加以澄清似乎就暗昧而模糊不清的思想弄清楚，并且给它们划出明确的界限。

4.1121 Psychology is no more closely related to philosophy than any other natural science.

Theory of knowledge is the philosophy of psychology.

Does not my study of sign-language correspond to the study of thought-processes, which philosophers used to consider so essential to the philosophy of logic? Only in most cases they got entangled in unessential psychological investigations, and with my method too there is an analogous risk.

4.1121 心理学并不比任何其他自然科学与哲学有更相近的关系。

知识论是心理学的哲学。

我对指号语言的研究与哲学家们认为对逻辑哲学如此重要的那些思想过程的研究不是一致的吗？只是他们大多纠缠于一些无关紧要的心理学研究，我的方法也有类似的危险。

4.1122 Darwin's theory has no more to do with philosophy than any other hypothesis in natural science.

4.1122 达尔文学说跟自然科学的任何其他假说一样与哲学无关。

4.113 Philosophy sets limits to the much disputed sphere of natural science.

4.113 哲学为自然科学中有争论的领域划出界限。

4.114 It must set limits to what can be thought; and, in doing so, to what cannot be thought.

It must set limits to what cannot be thought by working outwards through what can be thought.

4.114 哲学应当为可思的东西划界限，从而也为不可思的东西划界限。【210】

哲学应当通过可思的东西从内部为不可思的东西划界限。

4.115 It will signify what cannot be said, by presenting clearly what can be said.

4.115 哲学通过清楚地表现可说的东西而意味着不可说的东西。

4.116 Everything that can be thought at all can be thought clearly. Everything that can be put into words can be put clearly.

4.116 凡是可思的东西都可以被清楚地思。凡是可说的东西都可以被清楚地说。

4.12 Propositions can represent the whole of reality, but they /30/ cannot represent what they must have in common with reality in order to be able to represent it—logical form. In order to be able to represent logical form, we should have to be able to station ourselves with propositions somewhere outside logic, that is to say outside the world.

4.12 命题能表现全部实在，但是不能表现其为能表现实在而必须与实在共有的东西——逻辑形式。

为能表现逻辑形式，我们必须能使自己连同命题都处于逻辑之外，亦即处于世界之外。

4.121 Propositions cannot represent logical form: it is mirrored in them.

What finds its reflection in language, language cannot represent.

What expresses itself in language, we cannot express by means of language.

Propositions show the logical form of reality.

They display it.

4.121 命题不能表现逻辑形式，逻辑形式反映于命题中。

语言不能表现那反映在语言中的东西。

我们不能用语言表达那自身表达于语言中的东西。命题显示实在的逻辑形式。

命题揭示实在的逻辑形式。

4.1211 Thus one proposition ‘fa’ shows that the object a occurs in its sense, two propositions ‘fa’ and ‘ga’ show that the same object is mentioned in both of them.

If two propositions contradict one another, then their follows from the other. And so on.

4.1211 因此，“fa”这一命题显示，在其意义中有对象a出现，“fa”和“ga”这两个命题则显示，在二者中谈论的是同一个对象。

4.1212 What can be shown, cannot be said.

4.1212 可显示的东西是不可说的。

4.1213 Now, too, we understand our feeling that once we have a sign-language in which everything is all right, we already have a correct logical point of view.

4.1213 现在我们就理解了，我们何以觉得，只要在我们的指号语言中一切都是正确的，我们就具有了一种正确的逻辑的观点。

4.122 In a certain sense we can talk about formal properties of objects and states of affairs, or, in the case of facts, about structural properties: and in the same sense about formal relations and structural relations.

(Instead of ‘structural property’ I also say ‘internal property’; instead of ‘structural relation’, ‘internal relation’.

I introduce these expressions in order to indicate the source of the confusion between internal relations and /31/ relations proper (external relations), which is very widespread among philosophers.)

It is impossible, however, to assert by means of propositions that such internal properties and relations obtain: rather, this makes itself manifest in the propositions that represent the relevant states of affairs and are concerned with the relevant objects.

4.122 在某种意义上，我们可以谈论对象和事态的形式特性，或事实的结构特性，而且在同样的意义上也可以谈论形式关系和结构关系。【211】

（也可以称“内在特性”而不称结构特性；也可以称“内在关系”而不称结构关系。

我采用这些说法，是为了指出在哲学家中间非常流行的对内在关系和本义的（外在的）关系的混淆的根源。）

但是这样的内在特性和关系的存在不可能用命题来断定，而是显示于表现那些事态并论及那些对象的命题。

4.1221 An internal property of a fact can also be called a feature of that fact (in the sense in which we speak of facial features, for example).

4.1221 我们也可以把一个事实的内在特性称为这个事实的一个特征。（在我们谈论例如面部特征的意义。）

4.123 A property is internal if it is unthinkable that its object should not possess it.

(This shade of blue and that one stand, eo ipso, in the internal relation of lighter to darker. It is unthinkable that these two objects should not stand in this relation.)

(Here the shifting use of the word ‘object’ corresponds to the shifting use of the words ‘property’ and ‘relation’.)

4.123 一种特性，如果不能想像其对象不具有它，这种特性就是内在的。

（因此，这个蓝颜色和那个蓝颜色有稍浅和略深的内在关系。不能想像这两个对象没有这种关系。）

（这里，“对象”一词的不确定的用法与“特性”和“关系”二词的不确定的用法是一致的。）

4.124 The existence of an internal property of a possible situation is not expressed by means of a proposition: rather, it expresses itself in the proposition representing the situation, by means of an internal property of that proposition.

It would be just as nonsensical to assert that a proposition had a formal property as to deny it.

4.124 一个可能的事况的内在特性的存在不是通过一个命题来表达的，而是借助于表现此事况的命题的一个内在特性而自行表达在此命题中。

把一种形式特性硬加之于一个命题，正如否定它具有这种特性一样，都是无意义的。

4.1241 It is impossible to distinguish forms from one another by saying that one has this property and another that property: for this presupposes that it makes sense to ascribe either property to either form.

4.1241 说一种形式具有这种特性，另一种形式具有那种特性，我们不可能以此把这些形式互相区别开来；因为这就假定了，断言这两种形式都具有这两种特性，是有意义的。

4.125 The existence of an internal relation between possible situations expresses itself in language by means of an internal relation between the propositions representing them. /32/

4.125 可能的事况间的一种内在关系的存在，通过表现这些事况的命题间的一种内在关系，自行表达在语言中。【212】

4.1251 Here we have the answer to the vexed question ‘whether all relations are internal or external’.

4.1251 “是否一切关系都是内在的或外在的”这个争论的问题，在这里就这样解决了。

4.1252 I call a series that is ordered by an internal relation a series of forms.

The order of the number-series is not governed by an external relation but by an internal relation.

The same is true of the series of propositions

$$\begin{aligned} & 'aRb', \\ & '(\exists x):aRx \dots xRb', \\ & '(\exists x,y):aRx \dots xRy \dots yRb', \\ & \text{and so forth.} \end{aligned}$$

(If b stands in one of these relations to a , I call b a successor of a .)

4.1252 根据内在关系顺序排列的系列，我称之为形式系列。

数列不是根据外在关系，而是根据内在关系顺序排列的。

命题系列亦然如是：[see above]。如此等等。

（如果b和a有这些关系中的一种关系，那么我就称b为a的一个后继。）

4.126 We can now talk about formal concepts, in the same sense that we speak of formal properties.

(I introduce this expression in order to exhibit the source of the confusion between formal concepts and concepts proper, which pervades the whole of traditional logic.)

When something falls under a formal concept as one of its objects, this cannot be expressed by means of a proposition. Instead it is shown in the very sign for this object. (A name shows that it signifies an object, a sign for a number that it signifies a number, etc.)

Formal concepts cannot, in fact, be represented by means of a junction, as concepts proper can.

For their characteristics, formal properties, are not expressed by means of functions.

The expression for a formal property is a feature of certain symbols.

So the sign for the characteristics of a formal concept is a distinctive feature of all symbols whose meanings fall under the concept. /33/

So the expression for a formal concept is a propositional variable in which this distinctive feature alone is constant.

4.126 现在我们也可以讲形式特性的意义上谈论形式概念。

（我采用这个词，是为了阐明贯串于全部旧逻辑对形式概念与本来意义的概念的混淆的根源。）

不可能用一个命题来表达某物之归属于一个形式概念而为其对象。但是在这个对象本身的指号中却显示了这一点。（一个名字表示它指称一个对象，一个数的指号表示它指称一个数，等等。）

形式概念的确不能像本来意义的概念那样用一个函项来表现。

因为它们的特征，形式的特性，不是用函项来表达的。

形式特性的表达式是某些符号的一个特征。

因此标志一个形式概念的特征的指号乃是其意谓归属于这个概念之下的一切符号的一个特有的特征。

因此，形式概念的表达式是一个命题变项，其中只有这种特有的特征是常项。【213】

4.127 The propositional variable signifies the formal concept, and its values signify the objects that fall under the concept.

4.127 命题变项标示形式概念，它的值标示归属于这个概念之下的对象。

4.1271 Every variable is the sign for a formal concept.

For every variable represents a constant form that all its values possess, and this can be regarded as a formal property of those values.

4.1271 每个变项都是一个形式概念的指号。

因为每个变项都代表一个恒定的形式，这个形式为变项的一切值所具有，而且可被看做这些值的形式特性。

4.1272 Thus the variable name 'x' is the proper sign for the pseudo-concept object.

Wherever the word 'object' ('thing', etc.) is correctly used, it is expressed in conceptual notation by a variable name.

For example, in the proposition, 'There are 2 objects which. . .', it is expressed by '($\exists x, y$). . .'.

Wherever it is used in a different way, that is as a proper concept-word, nonsensical pseudo-propositions are the result.

So one cannot say, for example, 'There are objects', as one might say, 'There are books'. And it is just as impossible to say, 'There are 100 objects', or, 'There are \aleph_0 objects'.

And it is nonsensical to speak of the total number of objects.

The same applies to the words ‘complex’, ‘fact’, ‘function’, ‘number’, etc.

They all signify formal concepts, and are represented in conceptual notation by variables, not by functions or classes (as Frege and Russell believed).

‘1 is a number’, ‘There is only one zero’, and all similar expressions are nonsensical. /34/

(It is just as nonsensical to say, ‘There is only one 1’, as it would be to say, ‘2+2 at 3 o’clock equals 4’.)

4.1272 因此变名“x”是对象这个伪似概念的特有指号。

凡是“对象”（“事物”，“物”，等等）一词被正确使用地方，概念文字都是以变名来表达它的。

例如，命题“有两个对象，其……”就是以“ $(\exists x, y) \dots$ ”来表达的。

凡是把“对象”一词另作本来意义的概念词使用的地方，就产生无意义的似是而非的命题。

因此，例如，我们不能如同说“有些书”那样，说“有些对象”。同样也不能说“有100个对象”，或“有 \aleph_0 对象”。⁵

谈论所有对象的数也是无意义的。

对“复合物”、“事实”、“函项”、“数”等词也都可以这样说。

它们全都标示形式概念，在概念文字中都是用变项而不是用函项或类（如弗雷格和罗素所认为的那样）来表现的。

“1是一个数”，“只有一个零”以及所有诸如此类的表达式，都是无意义的。

（说“只有一个1”正如说“在3点钟时 $2+2=4$ ”一样是无意义的。）【214】

4.12721 A formal concept is given immediately any object falling under it is given. It is not possible, therefore, to introduce as primitive ideas objects belonging to a formal concept and the formal concept itself. So it is impossible, for example, to introduce as primitive ideas both the concept of a function and specific functions, as Russell does; or the concept of a number and particular numbers.

4.12721 形式概念已与归属其下的一个对象一起被给出了。因此我们不能将一个形式概念的对象和这个形式概念本身都作为基本概念引进。因此，例如，不能（像罗素那样）将函项概念和具体的函项，或者将数的概念和一定的数，都作为基本概念引进。

4.1273 If we want to express in conceptual notation the general proposition, ‘b is a successor of a’, then we require an expression for the general term of the series of forms

$$\begin{aligned} & aRb, \\ & (\exists x): aRx . xRb, \\ & (\exists x, y): aRx . xRy . yRb, \\ & \dots \end{aligned}$$

In order to express the general term of a series of forms, we must use a variable, because the concept ‘term of that series of forms’ is a formal concept. (This is what Frege and Russell overlooked: consequently the way in which they want to express general propositions like the one above is incorrect; it contains a vicious circle.)

We can determine the general term of a series of forms by giving its first term and the general form of the operation that produces the next term out of the proposition that precedes it.

4.1273 如果我们想用概念文字来表达概括命题：“b是a的一个后继”，那么对此就需要有一个表达式来表示下面这个形式系列的普遍项：[see above]

我们只能用一个变项来表达一个形式系列的普遍项，因为这个形式系列的项的概念是一个形式概念。（弗雷格和罗素都忽视了这一点；因此他们想用以表达有如上述那种概括命题的方式是错误的；它包含着一种恶性循环。）

⁵ \aleph_0 为希伯莱字母，在数学上用以表示无穷数。——译者注

我们指出一个形式系列的第一项和由前一命题产生次一项的运算的普遍形式，由此就可以确定这个形式系列的普遍项。

4.1274 To ask whether a formal concept exists is nonsensical. For no proposition can be the answer to such a question.

(So, for example, the question, ‘Are there unanalysable subject-predicate propositions?’ cannot be asked.)

4.1274 关于一个形式概念是否存在的问题，是无意义的。

因为任何命题都不可能回答这样的问题。

(例如，我们不能问：“有没有不可分析的主谓式命题？”)

4.128 Logical forms are without number. /35/

Hence there are no pre-eminent numbers in logic, and hence there is no possibility of philosophical monism or dualism, etc.

4.128 逻辑形式是没有数目的。

因此在逻辑上没有特别的数目，因此没有哲学的一元论或二元论，等等。

4.2 The sense of a proposition is its agreement and disagreement with possibilities of existence and non-existence of states of affairs.

4.2 命题的意义是其与事态的存在和非存在的可能性之一致和不一致。【215】

4.21 The simplest kind of proposition, an elementary proposition, asserts the existence of a state of affairs.

4.21 最简单的命题，即原初命题，断定一个事态的存在。

4.211 It is a sign of a proposition’s being elementary that there can be no elementary proposition contradicting it.

4.211 原初命题的一个标志在于：没有任何原初命题能与之相矛盾。

4.22 An elementary proposition consists of names. It is a nexus, a concatenation, of names.

4.22 原初命题是由名字组成的，是名字的一种联结，一种连缀。

4.221 It is obvious that the analysis of propositions must bring us to elementary propositions which consist of names in immediate combination.

This raises the question how such combination into propositions comes about.

4.221 显然，我们对命题的分析一定要达到由名字直接结合而成的原初命题。

这里就提出了一个问题：名字之结合为命题是怎样实现的。

4.2211 Even if the world is infinitely complex, so that every fact consists of infinitely many states of affairs and every state of affairs is composed of infinitely many objects, there would still have to be objects and states of affairs.

4.2211 即使世界是无限复杂的，以致每个事实都是由无限多的事态构成的，每个事态又是由无限多的对象组合的，那么也必得有对象和事态存在。

4.23 It is only in the nexus of an elementary proposition that a name occurs in a proposition.

4.23 名字只有在原初命题的联结中才出现于命题。

4.24 Names are the simple symbols: I indicate them by single letters (‘x’, ‘y’, ‘z’).

I write elementary propositions as functions of names, so that they have the form 'fx', ' $\Phi(x,y)$ ', etc.
Or I indicate them by the letters '*p*', '*q*', '*r*'.

4.24 名字是简单符号，我用各个字母（“x”，“y”，“z”）表示它们。

我把原初命题写成具有“fx”，“ $\Phi(x,y)$ ”等等形式的名字的函项。

或者我用字母*p*, *q*, *r*来表示它们。

4.241 When I use two signs with one and the same meaning, I express this by putting the sign '=' between them. /36/

So ' $a = b$ ' means that the sign '*b*' can be substituted for the sign '*a*'.

(if I use an equation to introduce a new sign '*b*', laying down that it shall serve as a substitute for a sign '*a*' that is already known, then, like Russell, I write the equation— definition—in the form ' $a = b$ Def.' A definition is a rule dealing with signs.)

4.241 如果我使用两个具有同一意谓的指号，那么我就通过在二者之间置一等号“=”来表达之。因此，“ $a=b$ ”意即指号“a”可以指号“b”置换。

（如果我规定一个新的指号“b”可以置换一个已知的指号“a”，从而用一个方程式把这个新的指号引进来，那么我就（像罗素那样）把这个方程式——定义——写成“ $a=b$ Def.”这样的形式。⁶定义是一种指号规则。）【216】

4.242 Expressions of the form ' $a = b$ ' are, therefore, mere representational devices. They state nothing about the meaning of the signs '*a*' and '*b*'.

4.242 因此，“ $a=b$ ”形式的表达式只是一种暂用的表现手段；它对指号“a”、“b”的意谓并没有说出任何东西。

4.243 Can we understand two names without knowing whether they signify the same thing or two different things?—Can we understand a proposition in which two names occur without knowing whether their meaning is the same or different?

Suppose I know the meaning of an English word and of a German word that means the same: then it is impossible for me to be unaware that they do mean the same; I must be capable of translating each into the other.

Expressions like ' $a = a$ ', and those derived from them, are neither elementary propositions nor is there any other way in which they have sense. (This will become evident later.)

4.243 如果不知道两个名字是指称同一事物或两个不同的事物，我们能否了解它们呢？——如果不知道一个命题所包含的两个名字是意谓同一事物或不同的事物，我们能否了解这个命题呢？

比如说，如果我知道一个英语词和一个意谓相同的德语词的意谓，那么我就不可能不知道这两个词是意谓相同的；我就不可能不会把它们互相翻译。

诸如“ $a=a$ ”或由此推出的表达式，既不是原初命题，也不是另外有意义的指号。（后面将会证明这一点。）

4.25 If an elementary proposition is true, the state of affairs exists: if an elementary proposition is false, the state of affairs does not exist.

4.25 原初命题如果是真的，则事态存在；原初命题如果是假的，则事态不存在。

4.26 if all true elementary propositions are given, the result is a complete description of the world. The world is completely described by giving all elementary propositions, and adding which of them are true and which fake. /37/

⁶ Def 即Definition（定义）的缩写。——译者注

4.26 给出所有真的原初命题，就把世界完全地描述了。

通过给出所有的原初命题再加上指出其中哪些是真的哪些是假的，世界就被完全地描述了。

4.27 For n states of affairs, there are $K_n = \sum_{v=0}^n \binom{n}{v}$ possibilities of existence and non-existence.

Of these states of affairs any combination can exist and the remainder not exist.

4.27 关于 n 个事态的存在和非存在，有 $K_n = \sum_{v=0}^n \binom{n}{v}$ 可能性。

可能存在的是事态的一切结合，不可能存在其他的结合。

4.28 There correspond to these combinations the same number of possibilities of truth—and falsity—for n elementary propositions.

4.28 与这些结合相应， n 个原初命题有同样多的真假可能性。

4.3 Truth-possibilities of elementary propositions mean possibilities of existence and non-existence of states of affairs.

4.3 原初命题的真值可能性意即事态存在与非存在的可能性。

4.31 We can represent truth-possibilities by schemata of the following kind (' T ' means 'true', ' F ' means 'false'; the rows of ' T 's' and ' F 's' under the row of elementary propositions symbolize their truth-possibilities in a way that can easily be understood):

p	q	r		p	q		p
T	T	T		T	T		T
F	T	T		F	T		T
T	F	T		T	F		T
F	T	F		F	T		T
T	F	F		T	F		T
F	F	T		F	F		T
T	T	F		T	T		T
F	F	F		F	F		T
T	F	T		T	F		T
F	T	F		F	T		T
T	T	F		T	T		T
F	F	T		F	F		T
T	F	F		T	F		T
F	T	F		F	T		T
T	T	F		T	T		T
F	F	F		F	F		T

4.31 我们可以下面这样的图式来表示真值可能性（原初命题一排下面的“真”与“假”各行是以明白易懂的方式来标示真值可能性）：[see above] 【217】

4.4 A proposition is an expression of agreement and disagreement with truth-possibilities of elementary propositions.

4.4 命题是与原初命题的真值可能性一致和不一致的表达式。

4.41 Truth-possibilities of elementary propositions are the conditions of the truth and falsity of propositions. /38/

4.41 原初命题的真值可能性是命题之真假的条件。

4.411 It immediately strikes one as probable that the introduction of elementary propositions provides the basis for understanding all other kinds of proposition. Indeed the understanding of general propositions *palpably* depends on the understanding of elementary propositions.

4.411 我们一见就会感到，原初命题之引进是了解其他一切命题的基础。的确，对概括命题的了解显而易见是有赖于对原初命题的了解的。

4.42 For n elementary propositions there are $\sum_{K=0}^{Kn} \binom{Kn}{K} = L_n$ ways in which a proposition can agree and disagree with their truth-possibilities.

4.42 关于一个命题与 n 个原初命题的真值可能性之一致和不一致有 $\sum_{K=0}^{Kn} \binom{Kn}{K} = L_n$ 可能性。

4.43 We can express agreement with truth-possibilities by correlating the mark ‘ T ’ (true) with them in the schema.

The absence of this mark means disagreement.

4.43 我们可在图式中将“真”这个记号赋予诸原初命题的真值可能性，从而表达一个命题与这些真值可能性的一致。

没有“真”这个记号，就表示不一致。

4.431 The expression of agreement and disagreement with the truth-possibilities of elementary propositions expresses the truth-conditions of a proposition.

A proposition is the expression of its truth-conditions.

(Thus Frege was quite right to use them as a starting point when he explained the signs of his conceptual notation. But the explanation of the concept of truth that Frege gives is mistaken: if ‘the true’ and ‘the false’ were really objects, and were the arguments in $\sim p$ etc., then Frege’s method of determining the sense of ‘ $\sim p$ ’ would leave it absolutely undetermined.)

4.431 与原初命题的真值可能性一致和不一致的表达式表达命题的真值条件。

命题是真值条件的表达式。

(因此，弗雷格把真值条件作为对其概念文字的指号的解释而首先讲到它们，是完全正确的。不过弗雷格对真的概念的解释是错误的：如果“真”和“假”是实在的对象，【218】而且是“ $\sim p$ ”等等的主目，那么按照弗雷格的规定，“ $\sim p$ ”的意义是决然无法确定的。)

4.44 The sign that results from correlating the mark ‘ T ’ with truth-possibilities is a propositional sign.

4.44 通过“真”这个记号与真值可能性的关联而产生的指号是一个命题指号。

4.441 It is clear that a complex of the signs ‘ F ’ and ‘ T ’ has no object (or complex of objects) corresponding to it, just as there is none corresponding to the horizontal and vertical lines or to the brackets.—There are no ‘logical objects’. /39/

Of course the same applies to all signs that express what the schemata of ‘ T ’s’ and ‘ F ’s’ express.

4.441 显然，指号“假”和“真”的复合是没有对象（或对象的复合）与之相应的，正如水平线和垂直线或括弧没有任何对象与之相应一样。——“逻辑的对象”是没有的。当然，对于一切与“真”“假”图式所表达者相同的指号也可以这样说。

4.442 For example, the following is a propositional sign:

p	q	
\overline{T}	\overline{T}	\overline{T}
\overline{T}	\overline{T}	\overline{T}
\overline{T}	\overline{T}	\overline{T}
\overline{T}	\overline{T}	\overline{T}
\overline{T}	\overline{T}	\overline{T}
\overline{T}	\overline{T}	\overline{T}
\overline{T}	\overline{T}	\overline{T}

(Frege’s ‘judgement-stroke’ ‘ \vdash ’ is logically quite meaningless: in the works of Frege (and Russell) it simply indicates that these authors hold the propositions marked with this sign to be true. Thus ‘ \vdash ’ is no more a component part of a proposition than is, for instance, the proposition’s number. It is quite impossible for a

proposition to state that it itself is true.)

If the order of the truth-possibilities in a schema is fixed once and for all by a combinatory rule, then the last column by itself will be an expression of the truth-conditions. If we now write this column as a row, the propositional sign will become

‘(TT-T) (p,q)’

or more explicitly

‘(TTFT) (p,q)’.

(The number of places in the left-hand pair of brackets is determined by the number of terms in the right-hand pair.)

4.442 例如[see above]就是一个命题指号。

弗雷格的“判断符”“ \vdash ”在逻辑上是完全无意义的；它在弗雷格（和罗素）那里仅仅表示这两位作者认为被如此标示的命题是真的。因此，“ \vdash ”正如命题的号码一样不是命题自身结构所具有的一个命题不可能断定自己是真的。）

如果图式中真值可能性的次序是根据一种结合规则一劳永逸地规定了的，那么仅仅最后一纵行就已经是真值条件的一个表达式了。如果我们把一纵行写做一横排，那么这个命题指号就成为

“（真真—真）（p, q）”

或者写得更清楚些，就是【219】

“（真真假真）（p, q）”。

（左面括弧中的位数是由右面括弧中的项数决定的。）

4.45 For n elementary propositions there are L_n possible groups of truth-conditions.

The groups of truth-conditions that are obtainable /40/ from the truth-possibilities of a given number of elementary propositions can be arranged in a series.

4.45 对于 n 个原初命题，其真值条件有 L_n 个可能的组合。

可由一定数目的原初命题的真值可能性得到的那些真值条件的组合可以排成一个系列。

4.46 Among the possible groups of truth-conditions there are two extreme cases.

In one of these cases the proposition is true for all the truth-possibilities of the elementary propositions. We say that the truth-conditions are tautological.

In the second case the proposition is false for all the truth-possibilities: the truth-conditions are contradictory.

In the first case we call the proposition a tautology; in the second, a contradiction.

4.46 在真值条件的可能的组合中，有两种极端的情况。

在一种情况下，命题对于原初命题的一切真值可能性都是真的。我们说，这种真值条件是重言式的。

在第二种情况下，命题对于一切真值可能性都是假的：这种真值条件是矛盾式的。

4.461 Propositions show what they say: tautologies and contradictions show that they say nothing.

A tautology has no truth-conditions, since it is unconditionally true: and a contradiction is true on no condition.

Tautologies and contradictions lack sense.

(Like a point from which two arrows go out in opposite directions to one another.)

(For example, I know nothing about the weather when I know that it is either raining or not raining.)

4.461 命题显示其所说的东西，重言式和矛盾式显示其未说任何东西。

重言式没有任何真值条件，因为它是无条件真的；而矛盾式则不在任何条件下是真的。

重言式和矛盾式是缺乏意义的。

（有如一个点，两支箭都由之出发而向彼此相反的方向射出。）

（例如，如果我知道天在下雨或者没在下雨，那么我们对天气是不知道什么的。）

4.4611 Tautologies and contradictions are not, however, nonsensical. They are part of the symbolism, much as '0' is part of the symbolism of arithmetic.

4.4611 但是重言式和矛盾式不是无意义的；这属于符号系统，正如“0”属于算术符号系统一样。

4.462 Tautologies and contradictions are not pictures of reality. They do not represent any possible situations. For the former admit all possible situations, and the latter none.

In a tautology the conditions of agreement with the world—the representational relations—cancel one another, so that it does not stand in any representational relation to reality.

4.462 重言式和矛盾式不是实在的图像。它们不表现任何可能的事况。因为前者容许一切可能的事况，后者不容许任何可能的事况。

在重言式中，与世界相符合的条件——表现关系——互相抵消，因而它对实在没有任何表现关系。

【220】

4.463 The truth-conditions of a proposition determine the range that it leaves open to the facts. /41/

(A proposition, a picture, or a model is, in the negative sense, like a solid body that restricts the freedom of movement of others, and, in the positive sense, like a space bounded by solid substance in which there is room for a body.)

A tautology leaves open to reality the whole—the infinite whole—of logical space: a contradiction fills the whole of logical space leaving no point of it for reality. Thus neither of them can determine reality in any way.

4.463 真值条件规定命题留给事实的范围。

（命题、图像、模型，从消极的意义来说，有如一个固体的物体，限制别的物体的活动自由；从积极的意义来说，有如被坚固实体限定的空间，物体即处于其间。）

重言式把全部——无限的——逻辑空间留给实在；矛盾式占满全部逻辑空间，未给实在留下一点余地。因此二者无论如何都不可能规定实在。

4.464 A tautology's truth is certain, a proposition's possible, a contradiction's impossible.

(Certain, possible, impossible: here we have the first indication of the scale that we need in the theory of probability.)

4.464 重言式之真是确定的，命题之真是可能的，矛盾式之真是不可能的。

（确定的，可能的，不可能的：在这里我们就有了概率论里所需要的那种区别程度的指标。）

4.465 The logical product of a tautology and a proposition says the same thing as the proposition. This product, therefore, is identical with the proposition. For it is impossible to alter what is essential to a symbol without altering its sense.

4.465 重言式和一个命题的逻辑积所说的东西与这个命题所说的东西相同。因此，这个积与这个命题是等同的。因为我们不可能改变符号中本质的东西而不改变其意义。

4.466 What corresponds to a determinate logical combination of signs is a determinate logical combination of their meanings. It is only to the uncombined signs that absolutely any combination corresponds.

In other words, propositions that are true for every situation cannot be combinations of signs at all, since, if they were, only determinate combinations of objects could correspond to them.

(And what is not a logical combination has no combination of objects corresponding to it.)

Tautology and contradiction are the limiting cases—indeed the disintegration—of the combination of signs.

4.466 指号的一定的逻辑结合有其意谓的一定的逻辑结合与之相应；与漫无联系的指号相应的只是各种任意的结合。

这就是说，对于一切事况都是真的命题，决不可能是指号的结合，因为否则就只有对象的一定的结合能与之相应了。

（没有一种逻辑的结合没有一种对象的结合与之相应。）

重言式和矛盾式是指号结合的极限情况，即指号结合的消解。

4.4661 Admittedly the signs are still combined with one another even in tautologies and contradictions—i.e. they /42/ stand in certain relations to one another: but these relations have no meaning, they are not essential to the symbol.

4.4661 诚然，即使在重言式和矛盾式中，指号也是互相结合的，就是说，它们之间有相互的关系，但是这些关系是无意谓的，不是符号本质固有的。【221】

4.5 It now seems possible to give the most general propositional form: that is, to give a description of the propositions of any sign-language whatsoever in such a way that every possible sense can be expressed by a symbol satisfying the description, and every symbol satisfying the description can express a sense, provided that the meanings of the names are suitably chosen.

It is clear that only what is essential to the most general propositional form may be included in its description—for otherwise it would not be the most general form.

The existence of a general propositional form is proved by the fact that there cannot be a proposition whose form could not have been foreseen (i.e. constructed). The general form of a proposition is: This is how things stand.

4.5 现在似乎有可能提出最普遍的命题形式了，这就是说，可以作出关于任何一种指号语言的命题的描述，以使每一个可能的意义都能用一个适于给以这种描述的符号来表达，并且在名字的意谓已被适当选择时，使每个适于给以这种描述的符号都能表达一种意义。

显然，在描述最普遍的命题形式时，只需描述其本质的东西，——否则，它就不会是最普遍的形式了。不可能有任何命题，其形式是我们不能预见（即不能构造）的，这就证明了有一个普遍的命题形式。命题的普遍形式是：事情是如此如此的。

4.51 Suppose that I am given all elementary propositions: then I can simply ask what propositions I can construct out of them. And there I have all propositions, and that fixes then limits.

4.51 假定给我以所有的原初命题，那么就可以直截了当地提出一个问题：我从它们能构成哪些命题？那就是所有的命题，而且就这样给它们划了界限。

4.52 Propositions comprise all that follows from the totality of all elementary propositions (and, of course, from its being the totality of them all). (Thus, in a certain sense, it could be said that all propositions were generalizations of elementary propositions.)

4.52 命题是从所有原初命题的总和（当然亦即从其就是所有原初命题的总和）而得出的一切。（因此，在某种意义上，我们可以说，一切命题都是原初命题的概括。）

4.53 The general propositional form is a variable.

4.53 普遍命题形式是一个变项。

5 A proposition is a truth-function of elementary propositions.

(An elementary proposition is a truth-function of itself.) /43/

5 命题是原初命题的真值函项。

（原初命题是其自身的真值函项。）

5.01 Elementary propositions are the truth-arguments of propositions.

5.01 原初命题是命题的真值主目。

5.02 The arguments of functions are readily confused with the affixes of names. For both arguments and affixes enable me to recognize the meaning of the signs containing them.

For example, when Russell writes ‘+_c’, the ‘_c’ is an affix which indicates that the sign as a whole is the addition-sign for cardinal numbers. But the use of this sign is the result of arbitrary convention and it would be quite possible to choose a simple sign instead of ‘+_c’; in ‘~*p*’ however, ‘*p*’ is not an affix but an argument: the sense of ‘~*p*’ cannot be understood unless the sense of ‘*p*’ has been understood already. (In the name Julius Caesar ‘Julius’ is an affix. An affix is always part of a description of the object to whose name we attach it: e.g. the Caesar of the Julian gens.)

If I am not mistaken, Frege’s theory about the meaning of propositions and functions is based on the confusion between an argument and an affix. Frege regarded the propositions of logic as names, and their arguments as the affixes of those names.

5.02 函项的主目容易被混同于名字的附标。因为我既能从主目上也能从附标上认出包含它们的指号的意谓。

例如，在罗素的“+_c”中，“_c”是一个附标，表示这整个指号是基数的加号。但是这种标示法是基于一种任意的约定，【222】我们可以不用“+_c”而选择一个简单的指号；但是在“~*p*”中，“*p*”则不是一个附标，而是一个主目：除非先已了解了“*p*”的意义，是不可能了解“~*p*”的意义的。（在尤利乌斯·凯撒这个名字中，“尤利乌斯”是一个附标。附标永远是关于对象的描写的一部分，我们将其附加于对象的名字。例如，尤利家族的那个凯撒。）

如果我没有弄错的话，弗雷格关于命题和函项的意谓的理论就是基于对主目和附标的混淆的。在弗雷格看来，逻辑命题都是名字，其主目则是这些名字的附标。

5.1 Truth-functions can be arranged in series.

That is the foundation of the theory of probability.

5.1 真值函项可以排成系列。

这就是概率论的基础。

5.101 The truth-functions of a given number of elementary propositions can always be set out in a schema of the following kind:

(TTTT)	(<i>p, q</i>)	Tautology (If <i>p</i> then <i>p</i> , and if <i>q</i> then <i>q</i>). ($p \supset p, q \supset q$)
(FTTT)	(<i>p, q</i>)	In words: Not both <i>p</i> and <i>q</i> . ($\neg(p \cdot q)$)
(TFTT)	(<i>p, q</i>)	": If <i>q</i> then <i>p</i> . ($q \supset p$)
(TTFT)	(<i>p, q</i>)	": If <i>p</i> then <i>q</i> . ($p \supset q$)
(TTTF)	(<i>p, q</i>)	": <i>p</i> or <i>q</i> . ($p \vee q$)
(FFTT)	(<i>p, q</i>)	": Not <i>q</i> . ($\neg q$)
(FTFT)	(<i>p, q</i>)	": Not <i>p</i> . ($\neg p$)
(FTTF)	(<i>p, q</i>)	": <i>p</i> or <i>q</i> , but not both. ($p \cdot \neg q \vee q \cdot \neg p$)
(TFFT)	(<i>p, q</i>)	": If <i>p</i> then <i>q</i> , and if <i>q</i> then <i>p</i> . ($p \equiv q$)
(TFTF)	(<i>p, q</i>)	": <i>p</i>
(TTFF)	(<i>p, q</i>)	": <i>q</i>
(FFFF)	(<i>p, q</i>)	": Neither <i>p</i> nor <i>q</i> . ($\neg p \cdot \neg q$ or $p q$)
(FFTF)	(<i>p, q</i>)	": <i>p</i> and not <i>q</i> . ($p \cdot \neg q$)
(FTTF)	(<i>p, q</i>)	": <i>q</i> and not <i>p</i> . ($q \cdot \neg p$)
(TTFF)	(<i>p, q</i>)	": <i>q</i> and <i>p</i> . ($q \cdot p$)
(FTTF)	(<i>p, q</i>)	Contradiction (<i>p</i> and not <i>p</i> , and <i>q</i> and not <i>q</i>). ($p \cdot \neg p \cdot q \cdot \neg q$)

/44/ I will give the name truth-grounds of a proposition to those truth-possibilities of its truth-arguments that make it true.

5.101 各种数目的原初命题的真值函项可以写成下面的图式：

（真真真真）（*p, q*）重言式（如*p*则*p*；且如*q*则*q*。）（ $p \supset p, q \supset q$ ）

（假真真真）（*p, q*）以词言之：非*p*且*q*。（ $\sim(p \cdot q)$ ）

（真假真真）（*p, q*）以词言之：如*p*则*q*（ $q \supset p$ ）

(真真假真) (p, q) 以词言之: 如p则q。 ($p \supset q$)
 (真真真假) (p, q) 以词言之: p或q。 ($p \vee q$)
 (假假真真) (p, q) 以词言之: 非q。 ($\sim q$)
 (假真假真) (p, q) 以词言之: 非p。 ($\sim p$)
 (假真真假) (p, q) 以词言之: p或q, 但非p且q。 ($p \bullet \sim q: \vee: q \bullet \sim p$)
 (真假假真) (p, q) 以词言之: 如p则 q, 且如q则p。 ($p \equiv q$) 【223】
 (真假真假) (p, q) 以词言之: p
 (真真假假) (p, q) 以词言之: q
 (假假假真) (p, q) 以词言之: 非p亦非q。 ($\sim p \bullet \sim q$ 或 $p|q$)
 (假假真假) (p, q) 以词言之: p且非q。 ($p \bullet \sim q$)
 (假真假假) (p, q) 以词言之: q且非p。 ($q \bullet \sim p$)
 (真假假假) (p, q) 以词言之: p且q。 ($p \bullet q$)
 (假假假假) 矛盾式 (p且非p, 且q且非q。) ($p \bullet \sim p \bullet q \bullet \sim q$)

我把使一命题为真的那些真值主目的真值可能性称为它的真值根据。

5.11 if all the truth-grounds that are common to a number of propositions are at the same time truth-grounds of a certain proposition, then we say that the truth of that proposition follows from the truth of the others.

5.11 如果为若干命题所共有的一些真值根据也全都是某一命题的真值根据, 那么我们就说, 这个命题的真值是从那些命题的真值得来的。

5.12 In particular, the truth of a proposition 'p' follows from the truth of another proposition 'q' if all the truth-grounds of the latter are truth-grounds of the former.

5.12 如果命题“q”的一切真值根据都是命题“p”的真值根据, 那么命题“p”的真值就尤其是从命题“q”得来的。

5.121 The truth-grounds of the one are contained in those of the other: p follows from q.

5.121 一个命题的真值根据包含在另一个命题的真值根据中; p得自q。

5.122 If p follows from q, the sense of 'p' is contained in the sense of 'q'.

5.122 如果p得自q, 那么“p”的意义就包含在“q”的意义中。

5.123 if a god creates a world in which certain propositions are true, then by that very act he also creates a world in which all the propositions that follow from them come true. And similarly he could not create a world in which the proposition 'p' was true without creating all its objects.

5.123 如果一个神创造了一个世界, 其中有某些命题是真的, 由此他就也创造了一个所有从这些命题派生出来的命题在其中都是正确的世界。同样地, 他不可能创造一个命题“p”在其中为真的世界, 而不创造出它的一切对象。

5.124 A proposition affirms every proposition that follows from it.

5.124 一个命题肯定所有从它得出的命题。

5.1241 'p. q' is one of the propositions that affirm 'p' and at the same time one of the propositions that affirm 'q'.

Two propositions are opposed to one another if there is no proposition with a sense, that affirms them both. /45/

Every proposition that contradicts another negates it.

5.1241 “ $p \cdot q$ ”是肯定“ p ”的命题之一，同时又是肯定“ q ”的命题之一。【224】

如果没有一个对这两个命题都加以肯定的有意义的命题，那么这两个命题都就是彼此相反的。
每个与另一命题相矛盾的命题，都否定这另一命题。

5.13 When the truth of one proposition follows from the truth of others, we can see this from the structure of the propositions.

5.13 我们从命题的结构就可以看出，一个命题的真值是从另一命题的真值得出来的。

5.131 If the truth of one proposition follows from the truth of others, this finds expression in relations in which the forms of the propositions stand to one another: nor is it necessary for us to set up these relations between them, by combining them with one another in a single proposition; on the contrary, the relations are internal, and their existence is an immediate result of the existence of the propositions.

5.131 如果一个命题的真值得自另一些命题的真值，那么这一点已由这些命题形式的相互关系表达出来了；而且我们不必把它们彼此结合成一个命题才使它们具有这些关系；这些关系是内在的，一当这些命题存在，这些关系就存在，而且就是由于这些命题的存在才存在。

5.1311 When we infer q from $p \vee q$ and $\sim p$, the relation between the propositional forms of ' $p \vee q$ ' and ' $\sim p$ ' is masked, in this case, by our mode of signifying. But if instead of ' $p \vee q$ ' we write, for example, ' $p|q$. $|p|q$ ', and instead of ' $\sim p$ ', ' $p|p$ ' ($p|q$ - neither p nor q), then the inner connexion becomes obvious.

(The possibility of inference from $(x).fx$ to fa shows that the symbol $(x).fx$ itself has generality in it.)

5.1311 如果我们从 $p \vee q$ 和 $\sim p$ 推出 q ，那么“ $p \vee q$ ”和“ $\sim p$ ”的命题形式间的关系在这里是被标示方式所掩盖了的。但是，例如，如果我们不写“ $p \vee q$ ”而写做“ $p|q. |p|q$ ”，不写“ $\sim p$ ”而写做“ $p|p$ ”（ $p|q = \text{非}p \text{亦非}q$ ），那么内在联系就变得明显了。

（我们可从 $(x).fx$ 推出 fa ，这就表明，在符号“ $(x).fx$ ”中也有概括性。）

5.132 If p follows from q , I can make an inference from q to p , deduce p from q .

The nature of the inference can be gathered only from the two propositions.

They themselves are the only possible justification of the inference.

'Laws of inference', which are supposed to justify inferences, as in the works of Frege and Russell, have no sense, and would be superfluous.

5.132 如果 p 得自 q ，那么我就可以从 q 推出 p ；从 q 得到 p 。

仅从这两个命题就可得知推论的性质。

只有这两个命题自身能够证明这个推论是正确的。

在弗雷格和罗素看来应能证明推论正确的“推论法则”是缺乏意义的，而且是多余的。

5.133 All deductions are made a priori.

5.133 一切演绎都是先天造成的。【225】

5.134 One elementary proposition cannot be deduced from another. /46/

5.134 不可能从一个原初命题推出另一个原初命题。

5.135 There is no possible way of making an inference from the existence of one situation to the existence of another, entirely different situation.

5.135 没有任何方法能从某个事况的存在推出与它完全不同的一个事况的存在。

5.136 There is no causal nexus to justify such an inference.

5.136 没有一种因果联系证明这样的推论是正确的。

5.1361 We cannot infer the events of the future from those of the present.

Superstition is nothing but belief in the causal nexus.

5.1361 我们不可能从现在的事情推知未来的事情。

相信因果联系是一种迷信。

5.1362 The freedom of the will consists in the impossibility of knowing actions that still lie in the future. We could know them only if causality were an inner necessity like that of logical inference.—The connexion between knowledge and what is known is that of logical necessity.

(‘A knows that p is the case’, has no sense if p is a tautology.)

5.1362 意志自由在于现在不可能知道未来的行为。只有因果性是一种有如逻辑推论的必然性那样的内在必然性，我们才可能知道未来的行为。能知与所知的关系是逻辑必然的关系。

(如果p是一个重言式，那么“A知道p是发生的事情”就是缺乏意义的。)

5.1363 If the truth of a proposition does not follow from the fact that it is self-evident to us, then its self-evidence in no way justifies our belief in its truth.

5.1363 如果从一个命题对我们是明显的推不出它是真的，那么明显性也就不能证明我们相信其为真是正确的。

5.14 If one proposition follows from another, then the latter says more than the former, and the former less than the latter.

5.14 如果一个命题是从另一命题得出的，那么后者就比前者说了更多的东西，前者比后者说得要少。

5.141 If p follows from q and q from p, then they are one and the same proposition.

5.141 如果p得自q且q亦得自p，那么它们就是同一个命题。

5.142 A tautology follows from all propositions: it says nothing.

5.142 重言式是从一切命题得出来的：它没有说任何东西。

5.143 Contradiction is that common factor of propositions which no proposition has in common with another. Tautology is the common factor of all propositions that have nothing in common with one another.

Contradiction, one might say, vanishes outside all propositions: tautology vanishes inside them. /47/

Contradiction is the outer limit of propositions: tautology is the unsubstantial point at their centre.

5.143 矛盾式是任何一个命题都不与其他命题共有的那种命题的共性。重言式是彼此没有任何共同的东西的一切命题的共性。

矛盾式可以说消逝于一切命题之外，重言式消逝于一切命题之内。

矛盾式是命题的外部界限，重言式是命题的无实质的中心点。【226】

5.15 If T_r is the number of the truth-grounds of a proposition ‘r’, and if T_{rs} is the number of the truth-grounds of a proposition ‘s’ that are at the same time truth-grounds of ‘r’, then we call the ratio $T_{rs} : T_r$ the degree of probability that the proposition ‘r’ gives to the proposition ‘s’.

5.15 如果真_r是命题“r”的真值根据的数，真_{rs}是命题“s”的那些同时又是“r”的真值根据的真值根据的数，那么我们就把真_r : 真_{rs}这个比率称为命题“r”给予命题“s”的概率度。

5.151 In a schema like the one above in 5.101, let T_r be the number of ‘T’s’ in the proposition r, and let T_{rs} be the number of ‘T’s’ in the proposition s that stand in columns in which the proposition r has ‘T’s’.

Then the proposition r gives to the proposition s the probability T_{rs} : T_r .

5.151 假设在像前面5.101那样的图式中，真 r 是命题 r 中“真”的数；真 rs 是命题 s 中那些与命题 r 的“真”列在同一行的“真”的数，那么命题 r 给予命题 s 的概率就是：真 rs ：真 r 。

5.1511 There is no special object peculiar to probability propositions.

5.1511 没有一种为概率命题所特有的特殊对象。

5.152 When propositions have no truth-arguments in common with one another, we call them independent of one another.

Two elementary propositions give one another the probability $1/2$.

If p follows from q , then the proposition ' q ' gives to the proposition ' p ' the probability 1. The certainty of logical inference is a limiting case of probability.

(Application of this to tautology and contradiction.)

5.152 彼此没有共同真值主目的命题，我们称之为互相独立的。

两个原初命题彼此给予的概率为 $1/2$ 。

如果 p 得自 q ，那么命题“ q ”给命题“ p ”的概率为1。逻辑推论的可靠性是概率的一种极限情形。

(将此应用于重言式和矛盾式。)

5.153 In itself, a proposition is neither probable nor improbable. Either an event occurs or it does not: there is no middle way.

5.153 一个命题本身既不是或许为真的，也不是未必为真的。一件事情或者出现，或者不出现，中间状态是没有的。

5.154 Suppose that an urn contains black and white balls in equal numbers (and none of any other kind). I draw one ball after another, putting them back into the urn. By this experiment I can establish that the number of black balls drawn and the number of white balls drawn approximate to one another as the draw continues. /48/

So this is not a mathematical truth.

Now, if I say, 'The probability of my drawing a white ball is equal to the probability of my drawing a black one', this means that all the circumstances that I know of (including the laws of nature assumed as hypotheses) give no more probability to the occurrence of the one event than to that of the other. That is to say, they give each the probability $1/2$, as can easily be gathered from the above definitions.

What I confirm by the experiment is that the occurrence of the two events is independent of the circumstances of which I have no more detailed knowledge.

5.154 假设在一个坛子里，有同样多的白球和黑球（而且没有别样的球）。我把球一个一个地取出来，又把它们放回坛子里去。这样，我通过这个试验就能够确定，当继续取下去时，被取出的黑球的数和被取出的白球的数是互相接近的。

因此这不是一个数学的事实。

现在如果我说：我取出一个白球和取出一个黑球的概率是一样的，那么这就是说：我所知道的一切情况（包括作为假说的自然律）并不给这件事的出现以比那件事的出现更大的概率。【227】这就是说，正如由上述解释容易得知的，它对这两件事的出现各给概率 $1/2$ 。

我通过这个试验所证明的是，这两件事的出现无赖于我并不详知的那些情况。

5.155 The minimal unit for a probability proposition is this: The circumstances—of which I have no further knowledge—give such and such a degree of probability

5.155 概率命题的单位是：情况——我对此别无所知——给某件事情的出现以某个概率度。

5.156 It is in this way that probability is a generalization.

It involves a general description of a propositional form.

We use probability only in default of certainty—if our knowledge of a fact is not indeed complete, but we do know something about its form.

(A proposition may well be an incomplete picture of a certain situation, but it is always a complete picture of something.)

A probability proposition is a sort of excerpt from other propositions.

5.156 因此，概率是一种概括。

它含有对一种命题形式的一种概括的描述。

只是在缺乏确实性时我们才需要概率。——尽管我们对一个事实知道得还不完全，但是对它的形式我们确有所知。

(一个命题虽然可能是某一事况的一个不完全的图像，但是它总是一个完全的图像。)

概率命题仿佛是其他一些命题的一个摘要。

5.2 The structures of propositions stand in internal relations to one another.

5.2 诸命题的结构彼此有内在的关系。

5.21 In order to give prominence to these internal relations we can adopt the following mode of expression: we can represent a proposition as the result of an operation that /49/ produces it out of other propositions (which are the bases of the operation).

5.21 我们把一个命题表现为由其他命题产生它的一种运算(其他命题为此运算的基础)的结果，由此就可以在我们的表达方式中强调地指出这些内在的关系。

5.22 An operation is the expression of a relation between the structures of its result and of its bases.

5.22 运算是运算的结果和运算的基础之间的一种关系的表达式。

5.23 The operation is what has to be done to the one proposition in order to make the other out of it.

5.23 运算是为了从一个命题构成其他命题而必须对这个命题所作的处理。

5.231 And that will, of course, depend on their formal properties, on the internal similarity of their forms.

5.231 这当然有赖于它们的形式特性，有赖于它们的形式内在相似性。

5.232 The internal relation by which a series is ordered is equivalent to the operation that produces one term from another.

5.232 排列出一个系列的内在关系相当于借以从其他项产生一个项的运算。【228】

5.233 Operations cannot make their appearance before the point at which one proposition is generated out of another in a logically meaningful way; i.e. the point at which the logical construction of propositions begins.

5.233 只有在一个命题以逻辑上有意谓的方式从另一命题产生出来的地方，才可能有运算出现。那就是说，在命题的逻辑构造开始的地方，才有运算出现。

5.234 Truth-functions of elementary propositions are results of operations with elementary propositions as bases. (These operations I call truth-operations.)

5.234 原初命题的真值函项是以原初命题为基础的运算的结果。(我称这些运算为真值运算。)

5.2341 The sense of a truth-function of p is a function of the sense of p.

Negation, logical addition, logical multiplication, etc.

(Negation reverses the sense of a proposition.)

5.2341的真值函项的意义是 p 的意义的函项。

否定，逻辑加，逻辑乘，等等，都是运算。（否定使命题的意义倒转过来。）

5.24 An operation manifests itself in a variable; it shows how we can get from one form of proposition to another.

It gives expression to the difference between the forms.

(And what the bases of an operation and its result have in common is just the bases themselves.)

5.24 运算显示在一个变项中；它表明我们如何能够从命题的一个形式达到另一个形式。

运算表达形式间的差别。

（运算的基础和结果间所共有的东西正是这些基础。）

5.241 An operation is not the mark of a form, but only of a difference between forms. /50/

5.241 运算不标示任何形式的特征，而只表征形式的差别。

5.242 The operation that produces ' q ' from p ' also produces ' r ' from ' q ', and so on. There is only one way of expressing this: ' p ', ' q ', ' r ', etc. have to be variables that give expression in a general way to certain formal relations.

5.242 从“ p ”得出“ q ”的同一个运算也从“ q ”得出“ r ”，等等。对此只能作如下的表述，即“ p ”，“ q ”，“ r ”等等都是把一定的形式关系一般表达出来的变项。

5.25 The occurrence of an operation does not characterize the sense of a proposition.

Indeed, no statement is made by an operation, but only by its result, and this depends on the bases of the operation.

(Operations and functions must not be confused with each other.)

5.25 运算并不表示命题意义的特征。

运算当然不陈述什么，只有运算的结果才作陈述，而这取决于运算的基础。

（运算和函项不可混淆）。

5.251 A function cannot be its own argument, whereas an operation can take one of its own results as its base.

5.251 一个函项不可能是其自己的主目，但是一个运算的结果却可以是其自己的基础。

5.252 It is only in this way that the step from one term of a series of forms to another is possible (from one type to another in the hierarchies of Russell and Whitehead).

(Russell and Whitehead did not admit the possibility of such steps, but repeatedly availed themselves of it.)

5.252 惟其如此，在一个形式系列中从一个项推进到另一个项（在罗素和怀特海的类型等级系统中是从一个类型推进到另一个类型）才是可能的。【229】（罗素和怀特海并未承认这种推进的可能性，但是却总在使用它。）

5.2521 If an operation is applied repeatedly to its own results, I speak of successive applications of it. (' $O'O'O'a$ ' is the result of three successive applications of the operation ' O ' to ' a '.)

In a similar sense I speak of successive applications of more than one operation to a number of propositions.

5.2521 一个运算之反复应用于其自己的结果，我称之为这个运算的连续应用。（“ $O'O'O'a$ ”

是“ $O\xi$ ”之三次连续应用于“a”的结果。)

我在同样的意义上说到多个运算之应用于一些命题。

5.2522 Accordingly I use the sign $[a, x, O'x]$ for the general term of the series of forms $a, O'a, O'O'a, \dots$. This bracketed expression is a variable: the first term of the bracketed expression is the beginning of the series of forms, the second is the form of a term x arbitrarily selected from the series, and the third is the form of the term that immediately follows x in the series. /51/

5.2522 因此, 我将 $a, O'a, O'O'a, \dots$ 这个形式系列写做:

“ $[a, x, O'x]$ ”。括在括弧里的这个表达式是一个变项。这个表达式的第一项是这个形式系列的开端, 第二项是这个系列中任意的一项 x 的形式, 第三项是系列中紧随 x 之后的那个项的形式。

5.2523 The concept of successive applications of an operation is equivalent to the concept 'and so on'.

5.2523 关于运算之连续应用的概念相当于“等等”的概念。

5.253 One operation can counteract the effect of another. Operations can cancel one another.

5.253 一个运算可能取消另一个运算的结果。诸运算可能互相抵消。

5.254 An operation can vanish (e.g. negation in $\sim\sim p$: $\sim\sim p = p$).

5.254 一个运算可以消失(例如, “ $\sim\sim p$ ”中的否定: $\sim\sim p = p$)。

5.3 All propositions are results of truth-operations on elementary propositions.

A truth-operation is the way in which a truth-function is produced out of elementary propositions.

It is of the essence of truth-operations that, just as elementary propositions yield a truth-function of themselves, so too in the same way truth-functions yield a further truth-function. When a truth-operation is applied to truth-functions of elementary propositions, it always generates another truth-function of elementary propositions, another proposition. When a truth-operation is applied to the results of truth-operations on elementary propositions, there is always a single operation on elementary propositions that has the same result.

Every proposition is the result of truth-operations on elementary propositions.

5.3 一切命题都是对原初命题做真值运算的结果。

真值运算是如何由原初命题形成真值函项的方法。

按照真值运算的本质, 正如由原初命题形成真值函项一样, 也可以相同的方法由一些真值函项形成一个新的真值函项。每个真值运算都从原初命题的一些真值函项再造出原初命题的又一个真值函项, 即一个命题。对以原初命题做真值运算的结果所做的一切真值运算, 其结果又是对原初命题的一个真值运算的结果。【230】

每个命题都是对原初命题做真值运算的结果。

5.31 The schemata in 4.31 have a meaning even when ' p ', ' q ', ' r ', etc. are not elementary propositions.

And it is easy to see that the propositional sign in 4.442 expresses a single truth-function of elementary propositions even when p and q are truth-functions of elementary propositions.

5.31 即使“ p ”, “ q ”, “ r ”等不是原初命题, 4.31的图式也具有意义。

不难看出, 即使“ p ”和“ q ”是原初命题的真值函项, 4.442中的命题指号也表达原初命题的一个真值函项。

5.32 All truth-functions are results of successive applications to elementary propositions of a finite number of truth-operations. /52/

5.32 一切真值函项都是对原初命题做有限数目的真值运算的结果。

5.4 At this point it becomes manifest that there are no ‘logical objects’ or ‘logical constants’ (in Frege’s and Russell’s sense).

5.4 在这里就明显看到，不存在（弗雷格和罗素所说的）“逻辑对象”或“逻辑常项”。

5.41 The reason is that the results of truth-operations on truth-functions are always identical whenever they are one and the same truth-function of elementary propositions.

5.41 因为对之做真值运算的真值函项若是原初命题的同一个真值函项，运算的一切结果就是等同的。

5.42 It is self-evident that \vee , \supset , etc. are not relations in the sense in which right and left etc. are relations.

The interdefinability of Frege’s and Russell’s ‘primitive signs’ of logic is enough to show that they are not primitive signs, still less signs for relations.

And it is obvious that the ‘ \supset ’ defined by means of ‘ \sim ’ and ‘ \vee ’ is identical with the one that figures with ‘ \sim ’ in the definition of ‘ \vee ’; and that the second ‘ \vee ’ is identical with the first one; and so on.

5.42 显然， \vee ， \supset 等等不是左和右等等那种意义上的关系。

弗雷格和罗素的逻辑“初始指号”可交相定义就已表明，这些指号不是初始指号，更不标示任何关系。而且很明显，我们用“ \sim ”和“ \vee ”来定义的“ \supset ”与我们用以同“ \sim ”一起来定义“ \vee ”的那个“ \supset ”是同一的，而且这个“ \vee ”和前一个“ \vee ”也是同一的。等等。

5.43 Even at first sight it seems scarcely credible that there should follow from one fact p infinitely many others, namely $\sim p$, $\sim\sim p$, etc. And it is no less remarkable that the infinite number of propositions of logic (mathematics) follow from half a dozen ‘primitive propositions’.

But in fact all the propositions of logic say the same thing, to wit nothing.

5.43 从一个事实 p 会得出无限多其他的事实，即 $\sim p$ ， $\sim\sim p$ ，等等，这的确很难令人一开头就相信的。而且无限多的逻辑（数学）命题会从半打“初始命题”得出来，也同样是令人惊异的。

但是，一切逻辑命题所说的都是相同的，即没有说任何东西。

5.44 Truth-functions are not material functions.

For example, an affirmation can be produced by double negation: in such a case does it follow that in some sense negation is contained in affirmation? Does ‘ $\sim p$ ’ negate $\sim p$, or does it affirm p —or both?

The proposition ‘ $\sim p$ ’ is not about negation, as if negation were an object: on the other hand, the possibility of negation is already written into affirmation.

And if there were an object called ‘ \sim ’, it would follow that ‘ $\sim p$ ’ said something different from what ‘ p ’ said, /53/ just because the one proposition would then be about \sim and the other would not.

5.44 真值函项不是实质函项。

例如，如果我们能以双否定产生一个肯定，那么在某种意义上，否定是否就包含在肯定之中呢？

【231】“ $\sim\sim p$ ”是否定 $\sim p$ 呢，还是肯定 p ；或者二者都是呢？

命题“ $\sim\sim p$ ”并非如论及一个对象那样论及否定；而是否定的可能性已然在肯定中被预先决定了。

而且如果有一个叫做“ \sim ”的对象，那么“ $\sim\sim p$ ”就会说某种不同于“ p ”的东西。因为在这种情况下，一个命题谈论的是一，而另一个命题谈论的则不是“ \sim ”

5.441 This vanishing of the apparent logical constants also occurs in the case of ‘ $\sim(\exists x).\sim fx$ ’, which says the same as ‘ $(x).fx$ ’, and in the case of ‘ $(\exists x).fx.x = a$ ’, which says the same as ‘ fa ’.

5.441 如果“ $\sim(\exists x).\sim fx$ ”与“ $(x).fx$ ”所说相同，或者“ $(\exists x).fx.x = a$ ”与“ fa ”所说相同，也会出现表面逻辑常项的这种消失。

5.442 If we are given a proposition, then with it we are also given the results of all truth-operations that have it as their base.

5.442 如果给我们一个命题，那么以它为基础的一切真值运算的结果也就同它一起被给出了。

5.45 if there are primitive logical signs, then any logic that fails to show clearly how they are placed relatively to one another and to justify their existence will be incorrect. The construction of logic out of its primitive signs must be made clear.

5.45 如果有逻辑的初始指号，那么一种正确的逻辑就必须弄清楚它们相互的地位并证明它们存在的有效性。逻辑之由其初始指号所构造，必须弄清楚。

5.451 If logic has primitive ideas, they must be independent of one another. If a primitive idea has been introduced, it must have been introduced in all the combinations in which it ever occurs. It cannot, therefore, be introduced first for one combination and later re-introduced for another. For example, once negation has been introduced, we must understand it both in propositions of the form ' $\sim p$ ' and in propositions like ' $\sim(p \vee q)$ ', ' $(\exists x).\sim fx$ ', etc. We must not introduce it first for the one class of cases and then for the other, since it would then be left in doubt whether its meaning were the same in both cases, and no reason would have been given for combining the signs in the same way in both cases.

(In short, Frege's remarks about introducing signs by means of definitions (in *The Fundamental Laws of Arithmetic*) also apply, mutatis mutandis, to the introduction of primitive signs.)

5.451 如果逻辑有一些基本概念，那么它们必是互相独立的。如果一个基本概念被引进，那么它必被引进它总在其中出现的一切结合。因此我们不可能将它先引进一种结合，然后又引进另一种结合。例如，如果否定被引进了，那么在“ $\sim p$ ”形式的命题中正如在像“ $\sim(p \vee q)$ ”，“ $(\exists x).\sim fx$ ”之类的命题中一样，我们对它必须有同样的理解。我们不能先把它引进一类情况，然后引进另一类情况，因为那样的话，在这两种情况下其意谓是否相同，还是一个疑问，而且没有任何理由在这种情况下使用同一指号结合方式。

(简言之，弗雷格关于通过定义引进指号所说的话(《算术基本法则》)，作适当的修改，对初始指号的引进也是适用的。)【232】

5.452 The introduction of any new device into the symbolism /54/ of logic is necessarily a momentous event. In logic a new device should not be introduced in brackets or in a footnote with, what one might call a completely innocent air.

(Thus in Russell and Whitehead's *Principia Mathematica* there occur definitions and primitive propositions expressed in words. Why this sudden appearance of words? It would require a justification, but none is given, or could be given, since the procedure is in fact illicit.)

But if the introduction of a new device has proved necessary at a certain point, we must immediately ask ourselves, 'At what points is the employment of this device now unavoidable?' and its place in logic must be made dear.

5.452 在逻辑符号系统中采用一种新的临时手段一定总是一件有重大影响的事情。任何一种新的临时手段，我们都不可在括弧里或在脚注中(可以说是非常天真地)加以引进。

(在罗素和怀特海的《数学原理》中就这样出现了用语词表述的定义和初始命题。此处何以突然出现语词?这需要有证明其正当的理由。但是没有而且一定不会有这样的证明，因为他们的这种做法实际上是不能容许的。)

但是，如果一种新的临时手段之采用已证明在某一点上是必要的，那么我们必须马上问一下：在什么地方这种临时手段总是不得不用上去?它在逻辑上的地位必须予以说明。

5.453 All numbers in logic stand in need of justification.

Or rather, it must become evident that there are no numbers in logic.

There are no pre-eminent numbers.

5.453 在逻辑上所有的数都必须证明其合理性。

或者更确切地说：必须指明，在逻辑上是不存在数的。

没有特异的数。

5.454 In logic there is no co-ordinate status, and there can be no classification.

In logic there can be no distinction between the general and the specific.

5.454 在逻辑上没有并列，不可能有分类。

在逻辑上不可能有较普遍和较特殊之别。

5.4541 The solutions of the problems of logic must be simple, since they set the standard of simplicity.

Men have always had a presentiment that there must be a realm in which the answers to questions are symmetrically combined—a priori—to form a self-contained system.

A realm subject to the law: Simplex sigillum veri.

5.4541 逻辑问题的解决一定是简单的，因为简单性是它们树立的标准。

人们总有一种预感，觉得必有一个领域，对这个领域的问题的解答是先天对称地联结着，而形成一个独立自足的有规则的结构。

这是 Simplex sigillum veri（简单性是真理的标志）这条定理对其适用的一个领域。

5.46 if we introduced logical signs properly, then we should also have introduced at the same time the sense of all combinations of them; i.e. not only ' $p \vee q$ ' but ' $\sim(p \vee \sim q)$ ' /55/ as well, etc. etc. We should also have introduced at the same time the effect of all possible combinations of brackets. And thus it would have been made clear that the real general primitive signs are not ' $p \vee q$ ', ' $(\exists x).fx$ ', etc. but the most general form of them" combinations.

5.46 如果我们正确地引进了逻辑指号，【233】那么我们由此也就已将其一切结合的意义引进了；因此，不仅“ $p \vee q$ ”被引进了，而且“ $\sim(p \vee \sim q)$ ”等等等等也已被引进了。我们由此也已将括弧的一切可能的结合的结果都引进了。而且由此就会明白看到，真正普遍的初始指号不是“ $p \vee q$ ”，“ $(\exists x).fx$ ”等等，而是它们结合的最普遍的形式。

5.461 Though it seems unimportant, it is in fact significant that the pseudo-relations of logic, such as \vee and \supset , need brackets—unlike real relations.

Indeed, the use of brackets with these apparently primitive signs is itself an indication that they are not the real primitive signs. And surely no one is going to believe that brackets have an independent meaning.

5.461 下面这个表面上并不重要的事实却是很重要的，即诸如 \vee 和 \supset 之类的逻辑上的伪似关系与真实的关系不同，它们需要加上括弧。

给这些表面上的初始指号加上括弧确已表明，它们实际上不是初始指号。大概总不会有人相信，括弧有一种独立的意谓。

5.4611 Signs for logical operations are punctuation-marks.

5.4611 逻辑的运算符是标点符号。

5.47 It is clear that whatever we can say in advance about the form of all propositions, we must be able to say all at once. An elementary proposition really contains all logical operations in itself. For 'fa' says the same thing as

' $(\exists x).fx.x = a$ '.

Wherever there is compositeness, argument and function are present, and where these are present, we

already have all the logical constants.

One could say that the sole logical constant was what all propositions, by their very nature, had in common with one another.

But that is the general propositional form.

5.47 显然，对一切命题的形式，凡是从一开始就可以说的东西，我们一定能够同时说。

原初命题确已包含了一切逻辑运算。因为“ fa ”与“ $(\exists x).fx.x=a$ ”所说的是相同的。

有组合之处，便有主目和函项，而有主目和函项之处，便已有一切逻辑常项。

我们可以说，惟一的逻辑常项是一切命题按其本性彼此共有的东西。

但是这就是普遍的命题形式。

5.471 The general propositional form is the essence of a proposition.

5.471 普遍的命题形式是命题的本质。

5.4711 To give the essence of a proposition means to give the essence of all description, and thus the essence of the world.

5.4711 指出命题的本质，意即指出一切描述的本质，从而也指出世界的本质。

5.472 The description of the most general propositional form /56/ is the description of the one and only general primitive sign in logic.

5.472 对最普遍的命题形式的描述就是对逻辑的一个惟一的普遍初始指号的描述。【234】

5.473 Logic must look after itself.

If a sign is possible, then it is also capable of signifying. Whatever is possible in logic is also permitted. (The reason why ‘Socrates is identical’ means nothing is that there is no property called ‘identical’. The proposition is nonsensical because we have failed to make an arbitrary determination, and not because the symbol, in itself, would be illegitimate.)

In a certain sense, we cannot make mistakes in logic.

5.473 逻辑必须关注自己。

一个可能的指号一定也能进行指称。凡是在逻辑上可能的东西，也就是被容许的东西。

（“苏格拉底是同一的”没有表示什么，是因为不存在一种所谓“同一的”性质。这个命题是无意义的，是因为我们没有作出某种任意的规定，而不是因为这个符号自在自为地就是不能容许的。）

从某种意义上说，我们不可能在逻辑上出错。

5.4731 Self-evidence, which Russell talked about so much, can become dispensable in logic, only because language itself prevents every logical mistake.—What makes logic a priori is the impossibility of illogical thought.

5.4731 罗素谈得如此之多的自明性在逻辑上会成为多余的，只是因为语言本身就防止了一切逻辑错误。——逻辑之为先天的，就在于非逻辑的思维是不可能的。

5.4732 We cannot give a sign the wrong sense.

5.4732 我们不可能给一个指号以不适当的意义。

5.47321 Occam’s maxim is, of course, not an arbitrary rule, nor one that is justified by its success in practice: its point is that unnecessary units in a sign-language mean nothing.

Signs that serve one purpose are logically equivalent, and signs that serve none are logically meaningless.

5.47321 奥康原则当然不是一种任意的规则，或者由其实践效果证明为正确的规则。它说明：指

号中不必要的成分不意味任何东西。

适用于一个目的的指号在逻辑上是相等的，不适用于任何目的的指号在逻辑上是无意味的。

5.4733 Frege says that any legitimately constructed proposition must have a sense. And I say that any possible proposition is legitimately constructed, and, if it has no sense, that can only be because we have failed to give a meaning to some of its constituents.

(Even if we think that we have done so.) Thus the reason why ‘Socrates is identical’ says nothing is that we have not given any adjectival meaning to the word ‘identical’. For when it appears as a sign for identity, it symbolizes in an entirely different way—the signifying relation is a different one—therefore the /57/ symbols also are entirely different in the two cases: the two symbols have only the sign in common, and that is an accident.

5.4733 弗雷格说：每个合法构成的命题必有~种意义；但是我说：每个可能的命题都是合法构成的，而如果没有意义，那只能是由于我们没有给它的某些成分以任何意味。

（尽管我们以为已经这样做了。）

因此，“苏格拉底是同一的”没有说任何东西，就是因为我们没有给作为形容词的“同一的”一词以任何意味。因为如果它是作为等号出现的，那么它就会以完全不同的方式——一种不同的指称关系——来标示了，因而在这两种情况下，符号是完全不同的；【235】这两个符号只是碰巧具有这个彼此共同的指号。

5.474 The number of fundamental operations that are necessary depends solely on our notation.

5.474 必要的基本运算的数目仅依我们的记法而定。

5.475 All that is required is that we should construct a system of signs with a particular number of dimensions—with a particular mathematical multiplicity.

5.475 问题只在于构造一个具有一定的度数——具有一定的数学复多性——的指号系统。

5.476 It is clear that this is not a question of a number of primitive ideas that have to be signified, but rather of the expression of a rule.

5.476 显然，这里不是关于必须加以标示的基本概念的数量问题，而是对一条规则的表达问题。

5.5 Every truth-function is a result of successive applications to elementary propositions of the operation ‘(---T)(ξ,)’

This operation negates all the propositions in the right-hand pair of brackets, and I call it the negation of those propositions.

5.5 每个真值函项是将运算

(.....真) (ξ,)

连续应用于原初命题的结果。

这个运算否定右面括弧中的一切命题，我把它称为这些命题的否定。

5.501 When a bracketed expression has propositions as its terms—and the order of the terms inside the brackets is indifferent—then I indicate it by a sign of the form ‘ $\overline{(X)}$ ’. ‘ξ’ is a variable whose values are terms of the bracketed expression and the bar over the variable indicates that it is the representative of all its values in the brackets.

(E.g. if ξ has the three values P, Q, R, then

$\overline{(X)} = (P, Q, R)$

What the values of the variable are is something that is stipulated.

The stipulation is a description of the propositions that have the variable as their representative. /58/

How the description of the terms of the bracketed expression is produced is nor essential.

We can distinguish three kinds of description: 1. direct enumeration, in which case we can simply substitute for the variable the constants that are its values; 2. giving a function fx whose values for all values of x are the propositions to be described; 3. giving a formal law that governs the construction of the propositions, in which case the bracketed expression has as its members all the terms of a series of Forms.

5.501 一个用括弧括起来而其诸项都是命题的表达式，如果括弧内诸项的顺序并不重要，我就用一个具有“ (\bar{x}) ”形式的指号来表示。“ ξ ”是一个变项，括弧内诸项是它的值；这个变项上面的横线表示它代表括弧里的一切值。

(因此，例如，如果 ξ 有三个值：P, Q, R, 那么

$$(\bar{x}) = (P, Q, R)$$

变项的值是被规定的了。

这种规定就是对由变项代表的命题的描述。

对括弧表达式的那些项的描述是如何产生的，并不重要。

我们可以将描述区分为三类：1. 直接列举。在这种情况下，我们可以直接用变项的常值置换变项。2. 举出一个函项 fx ，对于 x 的一切值来说，它的值都是要加以描述的命题。3. 指定一个形式规则，那些命题就是根据这个规则构成的。在这种情况下，【236】括弧内表达式的诸项就是一个形式系列的全部的项。

5.502 So instead of ‘(----T)(ξ ,)’, I write ‘ $N(\bar{x})$ ’

$N(\bar{x})$ is the negation of all the values of the propositional variable ξ .

5.502 因此，我不写“（……真）（ ξ , ……）”，而写成“ $N(\bar{x})$ ”。

$N(\bar{x})$ 是命题变项 ξ 的一切值的否定。

5.503 It is obvious that we can easily express how propositions may be constructed with this operation, and how they may not be constructed with it; so it must be possible to find an exact expression for this.

5.503 关于命题如何能通过这种运算被构造出来和如何不能通过它构造出来，显然是不难表达的，因此这种情况也必能找到一种精确的表达。

5.51 If I has only one value, then $N(\bar{x}) = \sim p$ (not p); if it has two values, then $N(\bar{x}) = \sim p \cdot \sim q$ (neither p nor q).

5.51 如果 ξ 只有一个值，那么 $N(\bar{x}) \sim p$ （非 p ）；如果有两个值，那么 $N(\bar{x}) = \sim p \cdot \sim q$ （非 p 亦非 a ）。

5.511 How can logics—all-embracing logic, which mirrors the world—use such peculiar crotchets and contrivances? Only because they are all connected with one another in an infinitely fine network, the great mirror.

5.511 无所不包、反映世界的逻辑何以会使用如此特殊的手段和作法？只是因为这一切都在一个无限精细的网络中，一面巨大的镜子中，互相联系着。

5.512 ‘ $\sim p$ ’ is true if ‘ p ’ is false. Therefore, in the proposition ‘ $\sim p$ ’, when it is true, ‘ p ’ is a false proposition. How then can the stroke ‘ \sim ’ make it agree with reality?

But in ‘ $\sim p$ ’ it is not ‘-’ that negates; it is rather what is common to all the signs of this notation that negate p .

That is to say the common rule that governs the construction of ' $\sim p$ ', ' $\sim\sim\sim p$ ', ' $\sim p \vee \sim p$ ', ' $\sim p.\sim p$ ', etc. (ad inf.). And this common factor mirrors negation.

5.512 如果“ p ”是假的，那么“ $\sim p$ ”就是真的。因此在真命题“ $\sim p$ ”中，“ p ”是一个假命题。那么“ \sim ”这一道线如何能使之符合于实在呢？

但是，在“ $\sim p$ ”中被否定的并不是“ \sim ”，而是这个记法中否定 p 的一切指号所共有的东西。

因而这就是“ $\sim p$ ”，“ $\sim\sim p$ ”， $\sim p \vee \sim p$ ， $\sim p \cdot \sim p$ ”等等，等等（以至无穷）按照它被构造出来的那个共同规则。而这个共同的东西又反映否定。

5.513 We might say that what is common to all symbols that /59/ affirm both p and q is the proposition ' $p.q$ '; and that what is common to all symbols that affirm either p or q is the proposition ' $p \vee q$ '.

And similarly we can say that two propositions are opposed to one another if they have nothing in common with one another, and that every proposition has only one negative, since there is only one proposition that lies completely outside it.

Thus in Russell's notation too it is manifest that ' $q: p \vee \sim p$ ' says the same thing as ' q ', that ' $p \vee \sim p$ ' says nothing.

5.513 我们可以说：既肯定 p 又肯定 q 的一切符号的共有的东西是命题“ $q \cdot p$ ”。肯定 p 或 q 的一切符号的共有的东西是命题“ p 或 q ”。

而且我们同样可以说：两个命题如果彼此没有共有的东西，它们就是彼此相反的；而且每个命题只有一个否定，因为只有一个命题完全外在于它。【237】

因此，在罗素的记法中。也明显地看出：“ $q: p \vee \sim p$ ”与“ q ”所说的是相同的；“ $p \vee \sim p$ ”没有说任何东西。

5.514 Once a notation has been established, there will be in it a rule governing the construction of all propositions that negate p , a rule governing the construction of all propositions that affirm p , and a rule governing the construction of all propositions that affirm p or q ; and so on. These rules are equivalent to the symbols; and in them their sense is mirrored.

5.514 一种记法如被确定下来，那么在这种记法里就有一条据以构成一切否定 p 的命题的规则，一条据以构成一切肯定 p 的命题的规则，一条据以构成一切肯定 p 或 q 的命题的规则，等等。这些规则相当于一些符号，而这些符号的意义又反映在这些规则中。

5.515 It must be manifest in our symbols that it can only be propositions that are combined with one another by ' \vee ', ' \cdot ', etc.

And this is indeed the case, since the symbol in ' p ' and ' q ' itself presupposes ' \vee ', ' \cdot ', etc. If the sign ' p ' in ' $p \vee q$ ' does not stand for a complex sign, then it cannot have sense by itself: but in that case the signs ' $p \vee p$ ', ' $p.p$ ', etc., which have the same sense as p , must also lack sense. But if ' $p \vee p$ ' has no sense, then ' $p \vee q$ ' cannot have a sense either.

5.515 从我们的符号就应看出，通过“ \vee ”、“ \cdot ”等等而互相结合起来的東西必然是命题。

而且情形也确是这样，因为符号“ p ”和“ q ”本身就假定了“ \vee ”、“ \cdot ”等等。如果在“ $p \vee q$ ”中指号“ p ”不代表一个复合符号，那么它单独地就不可能具有意义；但这样一来，与“ p ”具有相同意义的指号“ $p \vee p$ ”、“ $p \cdot p$ ”等等也就都是没有意义的了。但是如果“ $p \vee p$ ”没有意义，那么“ $p \vee q$ ”也不可能具有意义。

5.5151 Must the sign of a negative proposition be constructed with that of the positive proposition? Why should it not be possible to express a negative proposition by means of a negative fact? (E.g. suppose that ' a ' does not stand in a certain relation to ' b '; then this might be used to say that aRb was not the case.) /60/

But really even in this case the negative proposition is constructed by an indirect use of the positive.

The positive proposition necessarily presupposes the existence of the negative proposition and vice

versa.

5.5151 负命题的指号是否一定要用正命题的指号构成？

为什么我们不能以一负事实来表达一负命题？（例如，如果“a”和“b”没有某种关系，那么我们就可以把这表述为：aRb不是发生的事情。）

但是即使在这里，负命题也是间接地由正命题构成的。

正命题必然预先设定了负命题的存在，反之亦然。

5.52 If ξ has as its values all the values of a function fx for all values of x , then $N(\bar{x}) = \sim(\exists x).fx$.

5.52 如果 \bar{x} 的值是一个函项 fx 对于 x 的所有值而具有的所有的值，那么 $N(\bar{x}) = \sim(\exists x).fx$ 。

5.521 I dissociate the concept all from truth-functions.

Frege and Russell introduced generality in association with logical product or logical sum. This made it difficult to understand the propositions ‘ $(\exists x).fx$ ’ and ‘ $(x).fx$ ’ in which both ideas are embedded.

5.521 我把所有这个概念与真值函项分开。

弗雷格和罗素是将概括性与逻辑积或逻辑和联系在一起引进的。【238】这样就很难理解含有这两个观念的命题“ $(\exists x).fx$ ”和“ $(x).fx$ ”了。

5.522 What is peculiar to the generality-sign is first, that it indicates a logical prototype, and secondly, that it gives prominence to constants.

5.522 概括性指号的特点是：第一，它指示一种逻辑的元图像，其次，它突出了常项。

5.523 The generality-sign occurs as an argument.

5.523 概括性指号是作为主目出现的。

5.524 If objects are given, then at the same time we are given all objects.

If elementary propositions are given, then at the same time all elementary propositions are given.

5.524 如果一些对象被给出了那么所有的对象从而也就被给出了。

如果一些原初命题被给出了，那么所有的原初命题从而也就被给出了。

5.525 It is incorrect to render the proposition ‘ $(\exists x).fx$ ’ in the words, ‘ fx is possible’, as Russell does.

The certainty, possibility, or impossibility of a situation is not expressed by a proposition, but by an expression’s being a tautology, a proposition with sense, or a contradiction.

The precedent to which we are constantly inclined to appeal must reside in the symbol itself.

5.525 像罗素那样，将命题“ $(\exists x).fx$ ”用语词表述为“ fx 是可能的”，是不正确的。

一个事实的确实性，可能性或不可能性，不是由一个命题表达的，而是由一个表达式之为一个重言式，一个有意义命题或一个矛盾式来表达的。

我们会经常引用的先例必已存在于符号本身中。

5.526 We can describe the world completely by means of fully generalized propositions, i.e. without first correlating any name with a particular object.

Then, in order to arrive at the customary mode of /61/ expression, we simply need to add, after an expression like, ‘There is one and only one x such that . . .’, the words, ‘and that x is a ’.

5.526 我们通过完全概括化的命题，亦即无须从一开始就将某个名字归之于某个对象，就可以完全地描述世界。

于是，为了达到通常的表达方式，我们只须在“有一个且只有一个 x ，其……”这个表达式之后说：而且这个 x 是 a 。

5.5261 A fully generalized proposition, like every other proposition, is composite. (This is shown by the fact that in $(\exists x, \Phi), \Phi x$ we have to mention ' Φ ' and ' x ' separately. They both, independently, stand in signifying relations to the world, just as is the case in ungeneralized propositions.)

It is a mark of a composite symbol that it has something in common with other symbols.

5.5261 一个完全概括化的命题，像所有其他的命题一样，都是复合命题。（下面这个事实就说明了这一点，即在“ $(\exists x, \Phi), \Phi x$ ”中，我们必须分别提到“ Φ ”和“ x ”。正如在非概括化命题中一样，二者对世界有独立的指称关系。）

组合符号的特征是：它与其他符号有某种共同的东西。【239】

5.5262 The truth or falsity of every proposition does make some alteration in the general construction of the world. And the range that the totality of elementary propositions leaves open for its construction is exactly the same as that which is delimited by entirely general propositions.

(if an elementary proposition is true, that means, at any rate, one more true elementary proposition.)

5.5262 每个命题的真或假对世界的一般结构都有某种改变。而且原初命题的总和留给世界结构的范围恰恰是完全概括的命题所限定的范围。

（如果一个原初命题是真的，那么无论如何同时还有一个原初命题是真的。）

5.53 Identity of object I express by identity of sign, and not by using a sign for identity. Difference of objects I express by difference of signs.

5.53 对象的等同，我用指号的等同而不用等同的指号（等号）来表达。对象的差异则以指号的差异来表达。

5.5301 It is self-evident that identity is not a relation between objects. This becomes very dear if one considers, for example, the proposition ' $(x):fx. \supset .x = a$ '. What this proposition says is simply that only a satisfies the function f, and not that only things that have a certain relation to a satisfy the function f.

Of course, it might then be said that only a did have this relation to a; but in order to express that, we should need the identity-sign itself.

5.5301 同一显然不是对象间的关系。例如，看一下命题

“ $(x):fx. \supset .x = a$ ”，这一点就变得非常清楚了。这个命题所说的不过是：仅有a满足函项f，而不是仅有对a有某种关系的那些事物才满足函项f。

当然我们可以说，恰恰只有a对a具有这种关系，但是要把这表达出来，我们则需要等号本身。

5.5302 Russell's definition of '=' is inadequate, because according to it we cannot say that two objects have all their properties in common. (Even if this proposition is never correct, it still has sense.) /62/

5.5302 罗素关于“=”的定义是不适用的；因为根据他的定义，我们不能说两个对象共有一切特性。（即使这个命题决不是正确的，但它毕竟是有意义的。）

5.5303 Roughly speaking, to say of two things that they are identical is nonsense, and to say of one thing that it is identical with itself is to say nothing at all.

5.5303 顺便说一下，说两个事物是同一的，是无意义的，而说一个事物是自身同一的，则全然无所说。

5.531 Thus I do not write ' $f(a,b).a = b$ ', but ' $f(a,a)$ ' (or ' $f(b,b)$ '); and not ' $f(a,b).\sim a = b$ ', but ' $f(a,b)$ '.

5.531 因此，我不写“ $f(a, b) a=b$ ”，而写做“ $f(a, a)$ ”（或“ $f(b, b)$ ”）；不写“ $f(a, b) .\sim a=b$ ”，而写做“ $f(a, b)$ ”。

5.532 And analogously I do not write ‘ $(\exists x,y).f(x,y) .x = y$ ’, but ‘ $(\exists x).f(x,x)$ ’; and not ‘ $(\exists x,y) .f(x,y) .\sim x = y$ ’ but ‘ $(\exists x,y).f(x,y)$ ’.

(So Russell’s ‘ $(\exists x,y).fxy$ ’ becomes

$(\exists x,y).f(x,y).v.(\exists x).f(x,x)$ ’.)

5.532 同样地，我不写 “ $(\exists x, y) .f(x, y) .x=y$ ”，而写做 “ $(\exists x) .f(x, x)$ ”；不写 “ $(\exists x, y) .f(x, y) \sim x=y$ ”，而写做 “ $(\exists x, y) .f(x, y)$ ”。

(于是罗素的 “ $(\exists x, y) .fxy$ ” 就被代之以 “ $(\exists x, y) .f(x, y) .V (\exists x) .f(x, x)$ ” 。)

5.5321 Thus, for example, instead of ‘ $(x):fx \supset x = a$ ’ we write ‘ $(\exists x).fx. \supset .fa : \sim(\exists x,y).fx.fy$ ’.

And the proposition, ‘Only one x satisfies $f()$ ’, will read ‘ $(\exists x).fx : \sim(\exists x,y).fx.fy$ ’.

5.5321 因此，我们不写 “ $(x) : fx \supset x = a$ ”，【240】而写做例如 “ $(\exists x) .fx \supset .fa : \sim (\exists x, y) .fx.fy$ ”。

而且命题 “仅有一个。满足 $f()$ ” 要读作：“ $(\exists x) .fx : \sim (\exists x, y) .fx.fy$ ”。

5.533 The identity-sign, therefore, is not an essential constituent of conceptual notation.

5.533 因此，等号不是概念文字的一个本质的成分。

5.534 And now we see that in a correct conceptual notation pseudo-propositions like ‘ $a = a$ ’, ‘ $a = b.b = c. \supset a = c$ ’, ‘ $(x).x = x$ ’, ‘ $(\exists x).x = a$ ’, etc. cannot even be written down.

5.534 现在我们看到，在一种适当的概念文字中，是根本不能写类如 “ $a = a$ ”，“ $a = b.b = c. \supset a = c$ ”，“ $(x) .x = x$ ”，“ $(\exists x) .x = a$ ” 等等似是而非的命题的。

5.535 This also disposes of all the problems that were connected with such pseudo-propositions.

All the problems that Russell’s ‘axiom of infinity’ brings with it can be solved at this point.

What the axiom of infinity is intended to say would express itself in language through the existence of infinitely many names with different meanings.

5.535 由此一切与这样似是而非的命题相关的问题也就消除了。

罗素的 “无穷公理” 引起的一切问题在这里终究可以解决了。

无穷公理要说的东西会通过无穷多具有不同意谓的名字的存在而表达在语言中。

5.5351 There are certain cases in which one is tempted to use expressions of the form ‘ $a = a$ ’ or ‘ $p \supset p$ ’ and the like. In fact, this happens when one wants to talk about prototypes, e.g. about proposition, thing, etc. Thus in Russell’s /63/ Principles of Mathematics ‘ p is a proposition’—which is nonsense—was given the symbolic rendering ‘ $p \supset p$ ’ and placed as an hypothesis in front of certain propositions in order to exclude from their argument-places everything but propositions.

(It is nonsense to place the hypothesis ‘ $p \supset p$ ’ in front of a proposition, in order to ensure that its arguments shall have the right form, if only because with a non-proposition as argument the hypothesis becomes not false but nonsensical, and because arguments of the wrong kind make the proposition itself nonsensical, so that it preserves itself from wrong arguments just as well, or as badly, as the hypothesis without sense that was appended for that purpose.)

5.5351 在某些情况下，人们很想使用具有 “ $a = a$ ” 或 “ $p \supset p$ ” 以及诸如此类形式的表达式。在人们想谈论元图像：命题、事物等等的时候，就有这种情况。因此，罗素在《数学的原理》中曾用 “ $p \supset p$ ” 将 “ p 是一个命题” 这种无意义的话复述在符号中，并且把它作为假设放在某些命题之前，以使其主目位置只能为命题所占有。

(把 $p \supset p$ 这个假设放在一个命题之前以保证其主目具有适当的形式，这已经就是无意义的了，因为对于作为主目的一个非命题来说，这个假设不是假的，而是无意义的，而且这个命题本身由于不适当的主目种类也成为无意义的，因而这个命题较之为此目的而附加的这个缺乏意义的假设对防止那些

不适当的主目并不更好些或更糟些。)

5.5352 In the same way people have wanted to express, ‘There are no things’, by writing ‘ $\sim(\exists x).x = x$. But even if this were a proposition, would it not be equally true if in fact ‘there were things’ but they were not identical with themselves?

5.5352 同样，人们想通过“ $\sim(\exists x).x=x$ ”来表达“没有任何事物存在”。【241】但是即使这是一个命题，——即使的确“有事物存在”，虽然这些事物并非与自身同一，这个命题不也会是真的吗？

5.54 In the general prepositional form propositions occur in other propositions only as bases of truth-operations.

5.54 在普遍命题形式中，命题只是作为真值运算的根据才出现在其他命题中。

5.541 At first sight it looks as if it were also possible for one proposition to occur in another in a different way.

Particularly with certain forms of proposition in psychology, such as ‘A believes that p is the case’ and ‘A has the thought p’, etc.

For if these are considered superficially, it looks as if the proposition p stood in some kind of relation to an object A.

(And in modern theory of knowledge (Russell, Moore, etc.) these propositions have actually been construed in this way.)

5.541 乍一看，一个命题似乎也能以其他方式出现在另一命题中。

尤其在某些心理学的命题形式中，如“A相信p是发生的事情”，或者“A认为p”，等等。

因为在这里表面看来，似乎命题p与对象A有某类关系。

(而且在现代的知识论(罗素、穆尔等人)中，对这些命题也就是这样解释的。)

5.542 It is clear, however, that ‘A believes that p’, ‘A has the /64/ thought p’, and ‘A says p’ are of the form “p” says p’: and this does not involve a correlation of a fact with an object, but rather the correlation of facts by means of the correlation of their objects.

5.542 但是，显然，“A相信p”，“A认为p”，“A说p”都是具有“‘p’说p”这种形式的命题；而且这里并不涉及一个事实和一个对象的相互配置，而是关于一些事实由于其对象的配置而成的配置的。

5.5421 This shows too that there is no such thing as the soul—the subject, etc.—as it is conceived in the superficial psychology of the present day.

Indeed a composite soul would no longer be a soul.

5.5421 这也表明，像如今肤浅的心理学所了解的那种灵魂——主体，等等——乃是一个子虚乌有。

一个复合的灵魂就不复是一个灵魂了。

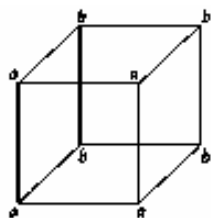
5.5422 The correct explanation of the form of the proposition, ‘A makes the judgement p’, must show that it is impossible for a judgement to be a piece of nonsense. (Russell’s theory does not satisfy this requirement.)

5.5422 对“A判断p”这个命题的形式的正确说明必须指出，判断一个子虚乌有的东西是不可能的。(罗素的理论没有满足这个条件。)

5.5423 To perceive a complex means to perceive that its constituents are related to one another in such

and such away.

This no doubt also explains why there are two possible ways of seeing the figure



as a cube; and all similar phenomena. For we really see two different facts.

(If I look in the first place at the corners marked a and only glance at the b's, then the a's appear to be in front, and vice versa).

5.5423 感知一个复合物即感知其诸成分彼此处于这样那样的关系中。

这或许也就说明了，对于下面这个图形何以可以两种方式看成立方形；而且这也可能说明一切类似的现象。因为我们的确就是看到了两个不同的事实。[see above] 【242】

（如果我首先注视诸a角，对诸b角只是匆匆一瞥，那么诸a角就似乎在前，而诸b角居后，反之则似乎诸b角在前，而诸a角居后了。）

5.55 We now have to answer a priori the question about all the possible forms of elementary propositions. /65/

Elementary propositions consist of names. Since, however, we are unable to give the number of names with different meanings, we are also unable to give the composition of elementary propositions.

5.55 现在我们对原初命题的一切可能的形式问题应当给以先天的回答。

原初命题是由名字组成的。但是由于我们不可能指出具有不同意谓的名字的数目，我们也就不能指出原初命题的组合。

5.551 Our fundamental principle is that whenever a question can be decided by logic at all it must be possible to decide it without more ado.

(And if we get into a position where we have to look at the world for an answer to such a problem, that shows that we are on a completely wrong track.)

5.551 我们的原则是：凡是完全可由逻辑判定的问题，都必可立即作出判定。

（而如果我们陷入了必须根据对世界的观察来回答这样问题的地步，那么这就表明我们走上了一条根本错误的道路。）

5.552 The ‘experience’ that we need in order to understand logic is not that something or other is the state of things, but that something is: that, however, is not an experience.

Logic is prior to every experience—that something is so. It is prior to the question ‘How?’, not prior to the question ‘What?’

5.552 我们了解逻辑而需要的“经验”，不是某物情况如何，而是某物存在：然而这恰恰不是经验。

逻辑是先于一切经验的——先于某物之为如此情况的。

逻辑先于“如何”，而非先于“是何”。

5.5521 And if this were not so, how could we apply logic? We might put it in this way: if there would be a logic even if there were no world, how then could there be a logic given that there is a world?

5.5521 如果不是如此，我们怎能使用逻辑呢？我们可以说：如果纵然世界不存在，也会有一个逻辑，那么既然有了一个世界，【243】又怎么会有一个逻辑呢？

5.553 Russell said that there were simple relations between different numbers of things (individuals). But between what numbers? And how is this supposed to be decided?—By experience?

(There is no pre-eminent number.)

5.553 罗素说，在事物（个体）的不同数目之间有简单的关系。但是在什么数目之间？而且如何来判定这一点呢？——通过经验来判定吗？

（没有特异的数。）

5.554 It would be completely arbitrary to give any specific form.

5.554 举出任何特殊的形式，都会是完全任意的。

5.5541 It is supposed to be possible to answer a priori the question whether I can get into a position in which I need the sign for a 27-termed relation in order to signify something.

5.5541 我是否可能，例如，陷入一种必须用27位关系的指号来指称某物的境地，对此应可先天地予以确定。

5.5542 But is it really legitimate even to ask such a question? /66/ Can we set up a form of sign without knowing whether anything can correspond to it?

Does it make sense to ask what there must be in order that something can be the case?

5.5542 但是我们究竟可不可以提出这样的问题呢？我们是否可能提出一种指号形式，却不知道有无某物与之相应呢？

下面这个问题有无意义，即为使某物能够成为发生的事情，必须有何物存在？

5.555 Clearly we have some concept of elementary propositions quite apart from their particular logical forms.

But when there is a system by which we can create symbols, the system is what is important for logic and not the individual symbols.

And anyway, is it really possible that in logic I should have to deal with forms that I can invent? What I have to deal with must be that which makes it possible for me to invent them.

5.555 显然，除了其特殊的逻辑形式之外，我们对原初命题还是有某种概念的。

但是，在我们能按照一个系统来构造符号的地方，在逻辑上重要的东西就是这个系统，而不是一些个别的符号。

而且不论我是否可能在逻辑上处理我所能创造的形式，但是我必须处理使我可能创造它们的东西。

5.556 There cannot be a hierarchy of the forms of elementary propositions. We can foresee only what we ourselves construct.

5.556 不可能有一个原初命题形式的等级系统。我们只能预见我们自己构造的东西。

5.5561 Empirical reality is limited by the totality of objects. The limit also makes itself manifest in the totality of elementary propositions.

Hierarchies are and must be independent of reality.

5.5561 经验的实在为对象总和所限定，这个界限又显现于原初命题的总和中。

等级系统是而且必然是独立于实在的。

5.5562 If we know on purely logical grounds that there must be elementary propositions, then everyone who understands propositions in their unanalysed form must know it.

5.5562 如果我们根据纯粹逻辑的理由，知道必然有原初命题，那么凡是在其未分析的形式上了

解了命题的人，一定都知道这一点。【244】

5.5563 In fact, all the propositions of our everyday language, just as they stand, are in perfect logical order. —That utterly simple thing, which we have to formulate here, is not a likeness of the truth, but the truth itself in its entirety.

(Our problems are not abstract, but perhaps the most concrete that there are.) /67/

5.5563 实际上，我们日常语言的一切命题，就像现在的样子，是有完全的逻辑次序的。——我们在这里应该说明的最简单的东西，不是真的一种类似物，而是整个的真本身。

（我们的问题不是抽象的，而也许是现有的最具体的问题。）

5.557 The application of logic decides what elementary propositions there are.

What belongs to its application, logic cannot anticipate.

It is clear that logic must not dash with its application.

But logic has to be in contact with its application.

Therefore logic and its application must not overlap.

5.557 逻辑的应用决定有哪些原初命题。

逻辑不能预见到包含在它的应用中的东西。显然，逻辑必不与其应用相冲突。

但是，逻辑必然涉及它的应用。

因此，逻辑与其应用不能互相重叠。

5.5571 if I cannot say a priori what elementary propositions there are, then the attempt to do so must lead to obvious nonsense.

5.5571 如果我不能先天地给出原初命题，那么要想给出它们就必然导致明显的无意义的话语。

5.6 The limits of my language mean the limits of my world.

5.6 我的语言的界限意谓我的世界的界限。

5.61 Logic pervades the world: the limits of the world are also its limits.

So we cannot say in logic, ‘The world has this in it, and this, but not that.’

For that would appear to presuppose that we were excluding certain possibilities, and this cannot be the case, since it would require that logic should go beyond the limits of the world; for only in that way could it view those limits from the other side as well.

We cannot think what we cannot think; so what we cannot think we cannot say either.

5.61 逻辑充满世界：世界的界限也是它的界限。

因此我们在逻辑上不能说：世界上有这个东西，而没有那个东西。

因为这似乎就要以排除某些可能性为前提，而这种情况是不可能的，因为否则逻辑就必须超出世界的界限，以便也能从世界之外的那一边来观察这些界限。

我们不能思我们不能思的东西；因此我们也不能说我们不能思的东西。

5.62 This remark provides the key to the problem, how much truth there is in solipsism.

For what the solipsist means is quite correct; only it cannot be said, but makes itself manifest.

The world is my world: this is manifest in the fact that the limits of language (of that language which alone I understand) mean the limits of my world.

5.62 这段议论为判定唯我论在多大程度上是一个真理的问题提供了一把钥匙。

这就是说，唯我论的命意是完全正确的，只是它不可说，而是显示出来。

世界是我的世界，这一点就显示在语言（惟一能为我所理解的语言）的界限意谓我的世界的界限。

【245】

5.621 The world and life are one.

5.621 世界与人生是一回事。

5.63 I am my world. (The microcosm.) /68/

5.63 我是我的世界。（小宇宙。）

5.631 There is no such thing as the subject that thinks or entertains ideas.

If I wrote a book called *The World as I found it*, I should have to include a report on my body, and should have to say which parts were subordinate to my will, and which were not, etc., this being a method of isolating the subject, or rather of showing that in an important sense there is no subject; for it alone could not be mentioned in that book.—

5.631 不存在能思维、能表象的主体。

如果我写一本名为《我所看到的世界》的书，那么在书中也会谈到我的身体，而且会说明哪些肢体部分服从我的意志，哪些不服从，等等。这就是使主体离析出来的一种方法，或者更确切地说，是指主体在一个重要的意义上并不存在的方法：也就是说，在这本书里惟独不能谈到主体。——

5.632 The subject does not belong to the world: rather, it is a limit of the world.

5.632 主体不属于世界，但是它是世界的一个界限。

5.633 Where in the world is a metaphysical subject to be found?

You will say that this is exactly like the case of the eye and the visual field. But really you do not see the eye.

And nothing in the visual field allows you to infer that it is seen by an eye.

5.633 要在世界何处去发觉一个形而上学的主体呢？

你说，这完全有类乎眼之与视野的情形。但是你实际上看不见眼。

而且从视野中的任何东西都不可能推出它是由一只眼看到的。

5.6331 For the form of the visual field is surely not like this



5.6331 因为视野绝不具有下面这样的一种形式：[see above]

5.634 This is connected with the fact that no part of our experience is at the same time a priori.

Whatever we see could be other than it is. Whatever we can describe at all could be other than it is.

There is no a priori order of things.

5.634 这与下面这个事实有联系，即我们的经验没有任何部分也是先天的。

我们所看到的一切都可能又是另外的样子。

我们一般能描述的一切都可能又是另外的样子。【246】

不存在先天的事物次序。

5.64 Here it can be seen that solipsism, when its implications are followed out strictly, coincides with pure realism. The self of solipsism shrinks to a point without /69/ extension, and there remains the reality coordinated with It.

5.64 在这里我们看到，严格贯彻的唯我论与纯粹的实在论是一致的。唯我论的自我缩成一个无

广延的点，而与之同格的实在则保持不变。

5.641 Thus there really is a sense in which philosophy can talk about the self in a non-psychological way.

What brings the self into philosophy is the fact that ‘the world is my world’.

The philosophical self is not the human being, not the human body, or the human soul, with which psychology deals, but rather the metaphysical subject, the limit of the world—not a part of it.

5.641 因此，的确在某种意义上，在哲学中可以非心理学地谈论自我。

自我之进入哲学，是由于“世界是我的世界”。

哲学的自我并不是人，既不是人的身体，也不是心理学讨论的人的心灵，而是形而上学的主体，是世界的界限——而非世界的一部分。

6 The general form of a truth-function is $[\bar{p}, \bar{x}, N(\bar{x})]$.

This is the general form of a proposition.

6 真值函项的普遍形式是 $[\bar{p}, \bar{x}, N(\bar{x})]$ 。

这就是命题的普遍形式。

6.001 What this says is just that every proposition is a result of successive applications to elementary propositions of the operation $N(\bar{x})$.

6.001 这不过是说，每个命题都是对原初命题连续做 $N(\bar{x})$ 运算的结果。

6.002 if we are given the general form according to which propositions are constructed, then with it we are also given the general form according to which one proposition can be generated out of another by means of an operation.

6.002 如果给出了如何构成一个命题的普遍形式，那么从而也就给出了如何通过一个运算由一个命题产生另一个命题的普遍形式。

6.01 Therefore the general form of an operation $\Omega'(\eta)$ is

$[\bar{x}, N(\bar{x})]'(\eta) (= [\eta, \bar{x}, N(\bar{x})])$

This is the most general form of transition from one proposition to another.

6.01 因此，运算 $\Omega'(\eta)$ 的普遍形式是：

$[\bar{x}, N(\bar{x})]'(\eta) (= [\eta, \bar{x}, N(\bar{x})])$ 。

这是从一个命题过渡到另一个命题的最普遍的形式。

6.02 And this is how we arrive at numbers. I give the following definitions

$X = \Omega^0 x$ Def.

$\Omega' \Omega^v x = \Omega^{v+1} x$ Def.

So, in accordance with these rules, which deal with signs, we write the series /70/

$X, \Omega' x, \Omega' \Omega' x, \Omega' \Omega' \Omega' x, \dots$,

in the following way

$\Omega^0 x, \Omega^{0+1} x, \Omega^{0+1+1} x, \Omega^{0+1+1+1} x, \dots$

Therefore, instead of ‘ $[x, \zeta, \Omega' \zeta]$ ’,

I write ‘ $[\Omega^0 x, \Omega^v x, \Omega^{v+1} x]$ ’.

And I give the following definitions

$0+1=1$ Def.,

$0+1+1=2$ Def.,

$0+1+1+1=3$ Def.,

(and soon).

6.02 而且我们就是这样得到数的，我做出下面的定义：

$X=\Omega^0x$ Def.

$\Omega'\Omega^v x=\Omega^{v+1}x$ Def.

于是根据这些指号规则，我们将系列

$X, \Omega'x, \Omega'\Omega'x, \Omega'\Omega'\Omega'x, \dots$

写做 $\Omega^0x, \Omega^{0+1}x, \Omega^{0+1+1}x, \Omega^{0+1+1+1}x, \dots$ 【247】

因此我不是写做 “[$x, \xi, \Omega'\xi$]”，而是写做

“ $[\Omega^0x, \Omega^v x, \Omega^{v+1}x]$ ”

并且做出下面的定义：

$0+1=1$ Def.,

$0+1+1=2$ Def.,

$0+1+1+1=3$ Def., （等等）。

6.021 A number is the exponent of an operation.

6.021 数是一个运算的指数。

6.022 The concept of number is simply what is common to all numbers, the general form of a number.

The concept of number is the variable number. And the concept of numerical equality is the general form of all particular cases of numerical equality.

6.022 数的概念不过是一切数所共有的东西，即数的普遍形式。

数的概念是变数。

而且等数的概念是一切特殊的等数的普遍形式。

6.03 The general form of an integer is $[0, \xi, \xi+1]$.

6.03 整数的普遍形式是： $[0, \xi, \xi+1]$ 。

6.031 The theory of classes is completely superfluous in mathematics.

This is connected with the fact that the generality required in mathematics is not accidental generality.

6.031 类的理论在数学上完全是多余的。

这与数学上所需要的概括性不是偶然的概括性有关。

6.1 The propositions of logic are tautologies.

6.1 逻辑命题是重言式。

6.11 Therefore the propositions of logic say nothing. (They are the analytic propositions.)

6.11 因此，逻辑命题没有说任何东西。（它们是分析命题。）

6.111 All theories that make a proposition of logic appear to have content are false. One might think, for example, that the words ‘true’ and ‘false’ signified two properties among other properties, and then it would seem to be a remarkable fact that every proposition possessed one of these properties. On this theory it seems to be anything /71/ but obvious, just as, for instance, the proposition, ‘All roses are either yellow or red’, would not sound obvious even if it were true. Indeed, the logical proposition acquires all the characteristics of a proposition of natural science and this is the sure sign that it has been construed wrongly.

6.111 认为逻辑命题似乎是富有内容的那些理论总是错误的。例如，人们可能认为“真”和“假”

这两个词是指称与其他特性一样的两种特性的。这样，所有的命题都具有这两种特性之一，就似乎是一种令人惊异的事实。现在看来，这个事实并不是自明的，正如“所有的玫瑰花或者是黄的，或者是红的”这个命题即使为真，人们也不觉得是自明的一样。诚然，逻辑命题现在已完全获得了一种自然科学命题的性质，而这正是它被人们错误理解的一个确实无疑的征兆。【242】

6.112 The correct explanation of the propositions of logic must assign to them a unique status among all propositions.

6.112 对逻辑命题的正确解释必然赋予它们一种在所有命题中惟其独具的地位。

6.113 It is the peculiar mark of logical propositions that one can recognize that they are true from the symbol alone, and this fact contains in itself the whole philosophy of logic. And so too it is a very important fact that the truth or falsity of non-logical propositions cannot be recognized from the propositions alone.

6.113 逻辑命题的特殊的标志是：我们仅就符号来看就可知其为真，而且这个事实本身就包含了全部逻辑哲学。因此，非逻辑命题的真假不可能仅就命题而知，这也是最重要的事实之一。

6.12 The fact that the propositions of logic are tautologies shows the formal—logical— properties of language and the world.

The fact that a tautology is yielded by this particular way of connecting its constituents characterizes the logic of its constituents.

If propositions are to yield a tautology when they are connected in a certain way, they must have certain structural properties. So their yielding a tautology when combined in this way shows that they possess these structural properties.

6.12 逻辑命题是重言式，这一点显示了语言和世界的形式的——逻辑的——特性。

重言式是由其诸成分之如此这般的联结而得到的，这一点表示出其诸成分的逻辑的特征。

要从以一定方式相联结的一些命题得出一个重言式，这些命题就必须具有某些结构特性。因此，它们之如此这般的联结得出一个重言式，就表明它们具有这些结构的特性。

6.1201 For example, the fact that the propositions ' p ' and " $\sim p$ " in the combination ' $\sim(p.\sim p)$ ' yield a tautology shows that they contradict one another. The fact that the propositions ' $p \supset q$ ', ' p ', and ' q ', combined with one another in the form ' $(p \supset q).(p) : \supset : (q)$ ', yield a tautology shows that q follows from p and $p \supset q$. The fact that ' $(x).fx : \supset : fa$ ' is a tautology shows that fa follows from $(x).fx$. Etc. etc. /72/

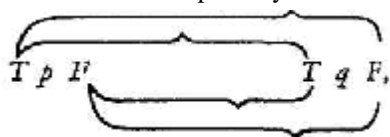
6.1201 例如，命题“ p ”与“ $\sim p$ ”结合成“ $\sim(p.\sim p)$ ”就得

出一个重言式，这表明它们是互相矛盾的。命题“ $p \supset q$ ”，“ p ”，和“ q ”以“ $(p \supset q).(p) : \supset : (q)$ ”的形式相联结而得出一个重言式，就表明 q 得自 p 和 $p \supset q$ 。“ $(x) fx : \supset : fa$ ”是一个重言式，表明 fa 得自 $(x) fx$ 。等等，等等。

6.1202 It is dear that one could achieve the same purpose by using contradictions instead of tautologies.

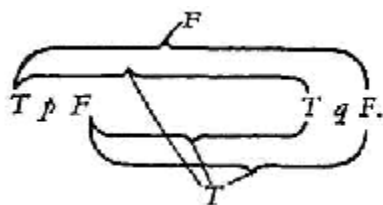
6.1202 显然，为了同一目的，我们可以用矛盾式而不用重言式。

6.1203 In order to recognize an expression as a tautology, in cases where no generality—sign occurs in it, one can employ the following intuitive method: instead of ' p ', ' q ', ' r ', etc. I write ' TpF ', ' TqF ', ' TrF ', etc. Truth-combinations I express by means of brackets, e.g.



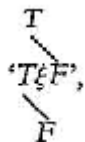
6.1203a

and I use lines to express the correlation of the truth or falsity of the whole proposition with the truth-combinations of its truth-arguments, in the following way



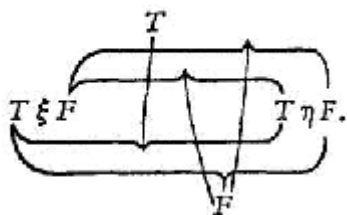
6.1203b

So this sign, for instance, would represent the proposition $p \supset q$. Now, byway of example, I wish to examine the proposition $\sim(p.\sim p)$ (the law of contradiction) in order to determine whether it is a tautology. In our notation the form ' $\sim\xi$ ' is written as /70/



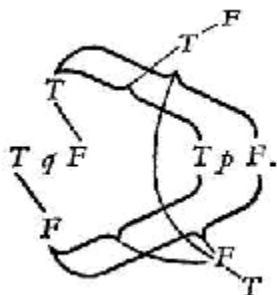
6.1203c

and the form ' $\xi.\eta$ ' as



6.1203d

Hence the proposition $\sim(p.\sim q)$ reads as follows



6.1203e

If we here substitute ' p ' for ' q ' and examine how the outermost T and F are connected with the innermost ones, the result will be that the truth of the whole proposition is correlated with all the truth-combinations of its argument, and its falsity with none of the truth-combinations.

6.1203 为了认出一个重言式是重言式，我们在这个重言式不包含概括性指号的情况下，可以使下面直观的方法，即我不写“ p ”，“ q ”，“ r ”等等，而是写做“真 p 假”，“真 q 假”，“真 r 假”，等等。我用括弧来表示真值组合，例如：【249】6.1203a

并且以下面的方式通过划线来表示整个命题的真假与真值主目的真值组合的相互关联：6.1203b

因此，例如这个指号就表示命题 $p \supset q$ 。于是我现在想考察一下例如 $\sim(p.\sim p)$ 这个命题（矛盾律）是不是一个重言式。在我们的记法中，“ $\sim\xi$ ”这个形式被写做：6.1203c

“ ξ, η ”这个形式则写做：6.1203d

因此命题 $\sim(p.\sim q)$ 便写做：6.1203e【250】

这里我们如以“ p ”代“ q ”，并考察一下最外层的真与假同最内层的真与假的连结，结果就会看到，整个命题的真是与其主目的一切真值组合相关联的，它的假则与其主目的任何真值组合都不相关联。

6.121 The propositions of logic demonstrate the logical properties of propositions by combining them so as to form propositions that say nothing.

This method could also be called a zero-method. In a logical proposition, propositions are brought into

equilibrium with one another, and the state of equilibrium then indicates what the logical constitution of these propositions must be.

6.121 逻辑命题把一些命题结合而成为无所说的命题，从而显示这些命题的逻辑特性。

我们也可以把这个方法称为一种零法。在逻辑命题中，请命题被带入互相平衡的状态，这种平衡的状态则表明这些命题在逻辑上必须如何构成。

6.122 It follows from this that we can actually do without /74/ logical propositions; for in a suitable notation we can in fact recognize the formal properties of propositions by mere inspection of the propositions themselves.

6.122 由此可见，即使没有逻辑命题也是可以的，因为在一种适当的记法中，我们仅仅通过这些命题的观察就可以认出命题的形式特性。

6.1221 If, for example, two propositions ' p ' and ' q ' in the combination ' $p \supset q$ ' yield a tautology, then it is dear that q follows from p .

For example, we see from the two propositions themselves that ' q ' follows from ' $p \supset q.p$ ', but it is also possible to show it in this way: we combine them to form ' $p \supset q.p : \supset : q$ ', and then show that this is a tautology.

6.1221 例如，如果“ p ”和“ q ”这两个命题结合成“ $p \supset q$ ”产生一个重言式那么显然。得自 p 。

例如，我们从“ p ”和“ a ”这两个命题本身就看出“ q ”得自“ $p \supset q.q$ ”，但是我们也可以像下面这样指出这一点，即将它们结合成“ $p \supset q.p : \supset : q$ ”，然后指出这是一个重言式。

6.1222 This throws some light on the question why logical propositions cannot be confirmed by experience any more than they can be refuted by it. Not only must a proposition of logic be irrefutable by any possible experience, but it must also be unconfirmable by any possible experience.

6.1222 这一点对于逻辑命题何以既不能被经验所证实亦不能被经验所驳倒的问题有所阐明。

【251】一个逻辑命题不仅一定不能被任何可能的经验所驳倒，而且也一定不能被任何可能的经验所证实。

6.1223 Now it becomes dear why people have often felt as if it were for us to 'postulate' the 'truths of logic'. The reason is that we can postulate them in so far as we can postulate an adequate notation.

6.1223 现在我们弄明白了，为什么我们常常觉得“逻辑的真”似乎是我们“要求”的：因为我们可以要求一种适当的记法而言，我们也可以要求“逻辑的真”。

6.1224 It also becomes clear now why logic was called the theory of forms and of inference.

6.1224 现在我们也弄明白了，为什么逻辑过去被称为关于形式和推论的理论。

6.123 Clearly the laws of logic cannot in their turn be subject to laws of logic.

(There is not, as Russell thought, a special law of contradiction for each 'type'; one law is enough, since it is not applied to itself.)

6.123 显然，逻辑规律本身不可能又受逻辑规律的制约。

(并非每个“类型”皆有其各自的特有的矛盾律，像罗素认为的那样；一条矛盾律就已足矣，因为它是不能用之于自身的。)

6.1231 The mark of a logical proposition is not general validity.

To be general means no more than to be accidentally valid for all things. An ungeneralized proposition can be tautological just as well as a generalized one. /75/

6.1231 普遍有效性不是逻辑命题的标志。

所谓普遍，只是说偶然地对一切事物有效。一个非概括化的命题和一个概括化的命题同样可以是重言式的。

6.1232 The general validity of logic might be called essential, in contrast with the accidental general validity of such propositions as “All men are mortal”¹. Propositions like Russell’s ‘axiom of reducibility’ are not logical propositions, and this explains our feeling that, even if they were true, then- truth could only be the result of a fortunate accident.

6.1232 与类如“所有的人都是有死的”那种命题的偶然的普遍有效性相反，我们可以称逻辑的普遍有效性为本质的普遍有效性。像罗素的“还原公理”之类的命题就不是逻辑命题，而且这就解释了我们为什么会觉得，即使它们是真的，也只能是由于一种侥幸的偶然而为真的。

6.1233 It is possible to imagine a world in which the axiom of reducibility is not valid. It is dear, however, that logic has nothing to do with the question whether our world really is like that or not.

6.1233 可以想像一个还原公理对其无效的世界。但是，逻辑与我们的世界是否确实如此的问题没有任何关系。

6.124 The propositions of logic describe the scaffolding of the world, or rather they represent it. They have no ‘subject-matter’. They presuppose that names have meaning and elementary propositions sense; and that is their connexion with the world. It is clear that something about the world must be indicated by the fact that certain combinations of symbols—whose essence involves the possession of a determinate character—are tautologies. This contains the decisive point. We have said that some things are arbitrary in the symbols that we use and that some things are not. In logic it is only the latter that express: but that means that logic is not a field in which we express what we wish with the help of signs, but rather one in which the nature of the absolutely necessary signs speaks for itself. If we know the logical syntax of any sign-language, then we have already been given all the propositions of logic.

6.124 逻辑命题描述世界的构架，或者说得更确切些，是表现世界的构架。它们无所“论述”。它们假定名字具有意义，原初命题具有意义，而且这就是它们与世界的联系。显然，本质上具有一定性质的诸符号的某些结合成为重言式，必对世界有所显示，这一点具有决定性的意义。我们曾说，我们使用的符号中有些东西是任意的，【252】有些东西不是任意的。在逻辑上只有后者才作表达。但这就是说，在逻辑上我们并不是借助于指号来表达我们想要表达的东西，而是自然必要的指号的本性在逻辑上自我陈述：如果我们知道了任何一种指号语言的逻辑句法，那么就已给出了一切逻辑命题。

6.125 It is possible—indeed possible even according to the old conception of logic—to give in advance a description of all ‘true’ logical propositions.

6.125 即使根据旧逻辑的观点，一开始就对所有“真的”逻辑命题加以描述，也是可能的。

6.1251 Hence there can never be surprises in logic.

6.1251 因此在逻辑上也绝不会有使人意想不到的东西。

6.126 One can calculate whether a proposition belongs to /76/ logic, by calculating the logical properties of the symbol.

And this is what we do when we ‘prove’ a logical proposition. For, without bothering about sense or meaning, we construct the logical proposition out of others using only rules that deal with signs.

The proof of logical propositions consists in the following process: we produce them out of other logical propositions by successively applying certain operations that always generate further tautologies out of the initial ones. (And in fact only tautologies follow from a tautology.)

Of course this way of showing that the propositions of logic are tautologies is not at all essential to logic, if only because the propositions from which the proof starts must show without any proof that they are

tautologies.

6.126 一个命题是否属于逻辑，我们可通过对符号的逻辑特性的推算而推算之。

这就是我们在“证明”一个逻辑命题时所做的事情。因为我们只是按照指号规则由其他命题来构造逻辑命题，而不考虑意义和意谓。

逻辑命题的证明在于，我们通过连续应用某些运算（这些运算从最初一些重言式又连续产生一些重言式）而从其他一些逻辑命题产生出这些逻辑命题。（而且从一个重言式只能得出重言式。）

当然，指出逻辑命题是重言式的这种方法对于逻辑来说是完全不重要的。因为证明由之出发的那些命题，即使没有证明也必能显示其为重言式。

6.1261 In logic process and result are equivalent. (Hence the absence of surprise.)

6.1261 在逻辑上过程和结果是等价的。（因此没有使人意想不到的东西。）

6.1262 Proof in logic is merely a mechanical expedient to facilitate the recognition of tautologies in complicated cases.

6.1262 逻辑上的证明不过是一种机械的辅助手段，使我们在重言式复杂的地方能容易地认出它们。

6.1263 Indeed, it would be altogether too remarkable if a proposition that had sense could be proved logically from others, and so too could a logical proposition. It is dear from the start that a logical proof of a proposition that has sense and a proof in logic must be two entirely different things.

6.1263 如果我们能从别的命题逻辑地证明一个有意义的命题，并且也能这样证明一个逻辑命题，那可真是太奇怪了。从一开始我们就明白看到了，对一个有意义的命题的逻辑证明和逻辑上的证明必然是两种完全不同的事情。【253】

6.1264 A proposition that has sense states something, which is shown by its proof to be so. In logic every proposition is the form of a proof.

Every proposition of logic is a modus ponens represented in signs. (And one cannot express the modus ponens by means of a proposition.) /77/

6.1264 有意义的命题陈述某种东西，它的证明就表明是这样的。在逻辑上，每个命题都是一个证明的形式。

每个逻辑命题都是一个以指号表现的modus ponens（假言推理的肯定式）。（然而我们不可能用一个命题来表达modus ponens）

6.1265 It is always possible to construe logic in such a way that every proposition is its own proof.

6.1265 我们总是可以这样来理解逻辑，以使每个命题都是其自身的证明。

6.127 All the propositions of logic are of equal status: it is not the case that some of them are essentially primitive propositions and others essentially derived propositions. Every tautology itself shows that it is a tautology.

6.127 一切逻辑命题都是平等的，其中没有初始命题和派生命题的本质区别。

每个重言式自身就显示了它是一个重言式。

6.1271 It is clear that the number of the 'primitive propositions of logic' is arbitrary, since one could derive logic from a single primitive proposition, e.g. by simply constructing the logical product of Frege's primitive propositions. (Frege would perhaps say that we should then no longer have an immediately self-evident primitive proposition. But it is remarkable that a thinker as rigorous as Frege appealed to the degree of self-evidence as the criterion of a logical proposition.)

6.1271 显然，“逻辑的初始命题”的数目是任意的，因为我们从一个初始命题，例如单由弗雷格的初始命题构成的逻辑积，把逻辑推导出来。（弗雷格也许会说，这样一来，这个初始命题就不复是直接自明的了。但奇怪的是，像弗雷格这样严谨的思想家竟诉诸自明的程度而以之为逻辑命题的标准。）

6.13 Logic is not a body of doctrine, but a mirror-image of the world.

Logic is transcendental.

6.13 逻辑不是一种学说，而是世界的一种映像。

逻辑是先验的。

6.2 Mathematics is a logical method.

The propositions of mathematics are equations, and therefore pseudo-propositions.

6.2 数学是一种逻辑方法。

数学命题是方程式，因而是似是而非的命题。

6.21 A proposition of mathematics does not express a thought.

6.21 数学命题不表达任何思想。

6.211 Indeed in real life a mathematical proposition is never what we want. Rather, we make use of mathematical propositions only in inferences from propositions that do not belong to mathematics to others that likewise do not belong to mathematics.

(In philosophy the question, ‘What do we actually use this word or this proposition for?’ repeatedly leads to valuable insights.) /78/

6.211 在生活中我们所需要的决不是数学命题；只是为了从一些不属于数学的命题推出其他一些同样不属于数学的命题，我们才利用数学命题。

（“我们究竟为何使用那个词，那个命题？”这个问题曾屡屡使人获得有价值的识见。）

6.22 The logic of the world, which is shown in tautologies by the propositions of logic, is shown in equations by mathematics.

6.22 数学以方程式来显示由逻辑命题显示于重言式中的世界的逻辑。【254】

6.23 If two expressions are combined by means of the sign of equality, that means that they can be substituted for one another. But it must be manifest in the two expressions themselves whether this is the case or not.

When two expressions can be substituted for one another, that characterizes their logical form.

6.23 如果两个表达式是用等号联结起来的，那么这就是说它们可以互相置换。但情况是否如此，则必在这两个表达式本身中显示出来。

两个表达式可以互相置换，这是它们的逻辑形式的特征。

6.231 It is a property of affirmation that it can be construed as double negation.

It is a property of ‘ $1 + 1 + 1 + 1$ ’ that it can be construed as ‘ $(1 + 1) + (1 + 1)$ ’.

6.231 肯定的一个特征在于我们可以将它看做双重否定。

“ $1+1+1+1$ ”的一个特性在于我们可以将它看做“ $(1+1) + (1+1)$ ”。

6.232 Frege says that the two expressions have the same meaning but different senses.

But the essential point about an equation is that it is not necessary in order to show that the two expressions connected by the sign of equality have the same meaning, since this can be seen from the two

expressions themselves.

6.232 弗雷格说，这两个表达式有同一意谓，但有不同意义。

但是，对方程式来说，重要的是：为了指出由等号所联结的两个表达式具有同一意谓，方程式并不是必要的，因为从这两个表达式本身就可以看出这一点。

6.2321 And the possibility of proving the propositions of mathematics means simply that their correctness can be perceived without its being necessary that what they express should itself be compared with the facts in order to determine its correctness.

6.2321 而且，数学命题可被证明，这不过是说，无须将其表达的东西本身与有关其正确性的事实相比较，就可以认识到它们是正确的。

6.2322 It is impossible to assert the identity of meaning of two expressions. For in order to be able to assert anything about their meaning, I must know their meaning, and I cannot know their meaning without knowing whether what they mean is the same or different.

6.2322 两个表达式的意谓的同一，是不能被断定的。因为为了能够对它们的意谓有所断定，我必须知道它们的意谓，而既然我知道它们的意谓，我也就知道它们所意谓的是同一个东西还是不同的东西。

6.2323 An equation merely marks the point of view from /79/ which I consider the two expressions: it marks their equivalence in meaning.

6.2323 方程式只表示我由之出发来观察两个表达式的观点，即它们的意谓同一的观点。

6.233 The question whether intuition is needed for the solution of mathematical problems must be given the answer that in this case language itself provides the necessary

6.233 我们在解决数学问题时是否需要直觉，对这个问题必须回答说，在这里语言恰恰提供了必需的直觉。

6.2331 The process of calculating serves to bring about that intuition.

Calculation is not an experiment.

6.2331 计算的过程正是使人获得这种直觉。

计算不是实验。

6.234 Mathematics is a method of logic.

6.234 数学是逻辑的一种方法。【255】

6.2341 It is the essential characteristic of mathematical method that it employs equations. For it is because of this method that every proposition of mathematics must go without saying.

6.2341 数学方法的本质特征在于使用方程式。每个数学命题之所以就其本身即可被理解，就是由于这种方法。

6.24 The method by which mathematics arrives at its equations is the method of substitution.

For equations express the substitutability of two expressions and, starting from a number of equations, we advance to new equations by substituting different expressions in accordance with the equations.

6.24 数学得到其方程式的方法是置换法。

因为方程式表示两个表达式的可置换性，而且我们按照方程式，将一些表达式代之以另外的表达式，这样就由一些方程式进而得到一些新的方程式。

6.241 Thus the proof of the proposition $2 \times 2 = 4$ runs as follows:

$$\begin{aligned}(\Omega^v)^{\mu'} \chi &= \Omega^{v \times \mu'} \chi \text{ Def.}, \\ \Omega^{2 \times 2'} \chi &= (\Omega^2)^{2'} \chi = (\Omega^2)^{1+1'} \chi \\ &= \Omega^{2'} \Omega^{2'} = \Omega^{1+1'} \Omega^{1+1'} \chi = (\Omega' \Omega)' (\Omega' \Omega)' \chi \\ &= \Omega' \Omega' \Omega' \Omega' \chi = \Omega^{1+1+1+1'} \chi = \Omega^{4'} \chi.\end{aligned}$$

6.241 因此，命题 $2 \times 2 = 4$ 的证明如下：[see above]

6.3 The exploration of logic means the exploration of everything that is subject to law. And outside logic everything is accidental.

6.3 逻辑的研究就是对一切规律性的研究。而在逻辑之外，一切都是偶然的。

6.31 The so-called law of induction cannot possibly be a law of logic, since it is obviously a proposition with sense.—Nor, therefore, can it be an a priori law.

6.31 所谓归纳律无论如何不可能是任何逻辑的规律，因为它显然是一个有意义的命题。——因此它也不可能是一个先天的规律。

6.32 The law of causality is not a law but the form of a law.

6.32 因果律不是一种规律，而是一种规律的形式。

6.321 ‘Law of causality’—that is a general name. And just as in mechanics, for example, there are ‘minimum-principles’, such as the law of least action, so too in physics there are causal laws, laws of the causal form.

6.321 “因果律”，这是一个类名。正如在力学上，我们说有一些“最小原理”——例如最小作用原理，在物理学上则有一些因果律，具有因果性形式的规律。

6.3211 Indeed people even surmised that there must be a ‘law of least action’ before they knew exactly how it went. (Here, as always, what is certain a priori proves to be something purely logical.)

6.3211 人们甚至在确切知道如何提出“最小作用原理”之前，就已经猜想到一定会有一个“最小作用原理”。（正如经常看到的那样，这里先天确实的东西证明是某种纯粹逻辑的东西）

6.33 We do not have an a priori belief in a law of conservation, but rather a priori knowledge of the possibility of a logical form.

6.33 我们不是先天地相信一种守恒定律，而是先天地知道一种逻辑形式的可能性。【256】

6.34 All such propositions, including the principle of sufficient reason, the laws of continuity in nature and of least effort in nature, etc. etc.—all these are a priori insights about the forms in which the propositions of science can be cast.

6.34 所有诸如充足理由律、自然界连续性定律、自然界最小消耗定律等等之类的命题，都是对于可能赋予科学命题以何种形式的先天的识见。

6.341 Newtonian mechanics, for example, imposes a unified form on the description of the world. Let us imagine a white surface with irregular black spots on it. We then say that whatever kind of picture these make, I can always approximate as closely as I wish to the description of it by covering the surface with a sufficiently fine square mesh, and then saying of every square whether it is black or white. In this way I shall have imposed a unified form on the description of the surface. The form is optional, since I could have

achieved the same result by using a net with a triangular or hexagonal mesh. Possibly the use of a triangular mesh would have made the description simpler: that is to say, it might be that we /81/ could describe the surface more accurately with a coarse triangular mesh than with a fine square mesh (or conversely), and so on. The different nets correspond to different systems for describing the world. Mechanics determines one form of description of the world by saying that all propositions used in the description of the world must be obtained in a given way from a given set of propositions—the axioms of mechanics. It thus supplies the bricks for building the edifice of science, and it says, ‘Any building that you want to erect, whatever it may be, must somehow be constructed with these bricks, and with these alone.’

(Just as with the number-system we must be able to write down any number we wish, so with the system of mechanics we must be able to write down any proposition of physics that we wish.)

6.341 例如，牛顿力学使关于世界的描述具有一种统一的形式。我们试想一个上面布有一些不规则黑色斑点的平面。现在我们说：不论由此产生怎样一幅图形，如果我把一张相当细密的方格网覆在这个平面上，并且说出每个方格是白的还是黑的，那么我就总能如我所欲地那样密切趋近对这个图形的描述。由此我就会使对这个平面的描述具有一种统一的形式。这种形式是任意的，因为我可用一种具有三角形网眼或六角形网眼的网状物来覆盖这个平面，其结果是一样的。利用一种三角形网眼的网，描述也许更简单些，这就是说，我们用一种有较粗疏的三角网眼的网比用一种有较细密的方格网眼的网（或者相反），能够更精确地描述这个平面，如此等等。不同的描述世界的系统相当于不同的网。力学告诉我们：描述世界的一切命题都必须以一定的方式由若干给定的命题即力学公理得出来，力学由此规定了一种描述世界的形式。从而它就为科学大厦的建筑供应了砖瓦，并且告诉我们：不论你要建筑什么样的大厦，你无论如何都必须用这些砖瓦而且只能用这些砖瓦把它们构造起来。

（正如我们根据数的系统能写出任何一个数目一样，我们根据力学系统必能写出任何一个物理学命题。）

6.342 And now we can see the relative position of logic and mechanics. (The net might also consist of more than one kind of mesh: e.g. we could use both triangles and hexagons.) The possibility of describing a picture like the one mentioned above with a net of a given form tells us nothing about the picture. (For that is true of all such pictures.) But what does characterize the picture is that it can be described completely by a particular net with a *particular* size of mesh.

Similarly the possibility of describing the world by means of Newtonian mechanics tells us nothing about the world: but what does tell us something about it is the precise *way* in which it is possible to describe it by these means. We are also told something about the world by the fact that it can be described more simply with one system of mechanics than with another.

6.342 现在我们看到逻辑和力学彼此相对的地位了。（我们也可使这个网由不同形状的网眼——例如三角形的和六角形的——来构成。）【257】像上面提到的那样一个图形可由一个具有某种形式的网来描述，这一点对于那个图形并没有陈述任何东西。（因为每一个这类的图形都是如此。）但是，那个图形可由具有一定密度的某个网完全地描述，这一点却是它的特征。

因此，世界可由牛顿力学来描述，这一点对于世界也无所陈述，但是，世界之被牛顿力学作为正是发生的事情那样描述，这一点却对世界有所陈述。一种力学对世界的描述比另一种的描述更简单，这一点对世界也有所说。

6.343 Mechanics is an attempt to construct according to a /82/ single plan all the true propositions that we need for the description of the world.

6.343 力学是按照一个统一的计划去构造描述世界所需要的一切真命题的一种尝试。

6.3431 The laws of physics, with all their logical apparatus, still speak, however indirectly, about the objects of the world.

6.3431 物理规律通过全部逻辑工具仍然是在谈论世界的对象。

6.3432 We ought not to forget that any description of the world by means of mechanics will be of the completely general kind. For example, it will never mention particular point-masses: it will only talk about any point-masses whatsoever.

6.3432 我们不要忘记，力学对世界的描述总是很概括的。

例如，在力学中绝不谈到某些特定的物质点，而谈论的总是无论哪一个物质点。

6.35 Although the spots in our picture are geometrical figures, nevertheless geometry can obviously say nothing at all about their actual form and position. The network, however, is purely geometrical; all its properties can be given a priori.

Laws like the principle of sufficient reason, etc. are about the net and not about what the net describes.

6.35 上述图形上的斑点虽然是几何图形，但是几何学对于它们的实际形式和位置显然不可能说什么。但是网是纯粹几何的，它的一切特性都可以被先天地指出来。如充足理由律等等的规律，都是讨论网而不是讨论网所描述的东西的。

6.36 If there were a law of causality, it might be put in the following way: There are laws of nature.

But of course that cannot be said: it makes itself manifest.

6.36 如果有因果律，我们就可以说：“有自然律。”

然而，这当然是不可说的，而是显示出来的。

6.361 One might say, using Hertz's terminology, that only connexions that are subject to law are thinkable.

6.361 用赫兹的术语，我们可以说：只有有规律的联系才是可思的。

6.3611 We cannot compare a process with 'the passage of time'—there is no such thing—but only with another process (such as the working of a chronometer).

Hence we can describe the lapse of time only by relying on some other process.

Something exactly analogous applies to space: e.g. when people say that neither of two events (which exclude one another) can occur, because there is nothing to cause the one to occur rather than the other, it is really a matter of our being unable to describe one of the two events unless there is some sort of asymmetry to be found. And if such an asymmetry is to be found, we can regard it as the cause of the occurrence of the one and the non-occurrence of the other.

6.3611 我们不可能将一个过程与“时间之流”——并无这种东西——相比较，而只能将一个过程与其他过程（例如精密计时计的走动）相比较。【258】

因此，只有借助于另一个过程，才有可能描述时间的流程。

空间的情况是类似的。例如，当我们说，两个（互相排斥的）事件中没有一个可能发生，因为没有任何原因使一个事件发生而另一个事件不发生，这实际上是说，如果没有某种不对称性，我们绝不可能描写这两个事件中的一个。如果有这样一种不对称性，那么我们就可以将它看做一个事件发生而另一个事件不发生的原因。

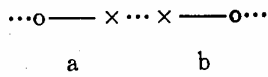
6.36111 Kant's problem about the right hand and the left hand, which cannot be made to coincide, exists even in two dimensions. Indeed, it exists in one-dimensional space

...o— × ... × —o...
a b

in which the two congruent figures, a and b, cannot be made to coincide unless they are moved out of this space. The Tight hand and the left hand are in fact completely congruent. It is quite irrelevant that they cannot be made to coincide.

A right-hand glove could be put on the left hand, if it could be turned round in four-dimensional space.

6.36111 康德关于我们不可能使右手和左手重合的问题，在平面中已然存在，甚至在一维空间中也存在。在一维空间中，两个全等的图形a和b不被移出这个空间，是不可能使它们相重合的。右手和左手事实上是完全相符的。我们之不可能使它们重合与此毫无关系。



如果我们能把右手的手套在四度空间中转一个儿，就可以把它戴在左手上。

6.362 What can be described can happen too: and what the law of causality is meant to exclude cannot even be described.

6.362 凡是可以描述的东西，也就可能发生；凡是应为因果律所排除的东西，也就不可能被描述。

6.363 The procedure of induction consists in accepting as true the simplest law that can be reconciled with our experiences.

6.363 归纳的过程在于采取可与我们的经验相一致的最简单的规律。

6.3631 This procedure, however, has no logical justification but only a psychological one.

It is clear that there are no grounds for believing that the simplest eventuality will in fact be realized.

6.3631 不过，这个过程并没有任何逻辑的根据，而只有一种心理的根据。

显然，没有任何理由相信，最简单的情况也就是实际上将要发生的。

6.36311 It is an hypothesis that the sun will rise tomorrow: and this means that we do not know whether it will rise.

6.36311 明天太阳将升起，是一个假设；而这就是说：我们并不知道，它是否将升起。【259】

6.37 There is no compulsion making one thing happen /84/ because another has happened. The only necessity that exists is logical necessity.

6.37 一事因另一事的发生而必然发生的那种强制性是不存在的。只有一种逻辑的必然性。

6.371 The whole modern conception of the world is founded on the illusion that the so-called laws of nature are the explanations of natural phenomena.

6.371 整个近代的世界观都基于这样一种幻觉，以为所谓自然律就是对自然现象的解释。

6.372 Thus people today stop at the laws of nature, treating them as something inviolable, just as God and Fate were treated in past ages.

And in fact both are right and both wrong: though the view of the ancients is clearer in so far as they have a clear and acknowledged terminus, while the modern system cries to make it look as if everything were explained.

6.372 因此，人们在自然律面前，还像古人在神和命运面前那样，将其奉为某种神圣不可侵犯的东西。

实则古人与今人都既是对的又是错的。不过，古人就其承认有一个明确的终极而言倒是更为清楚明白，而在近代的体系中则似乎把一切都给解释了。

6.373 The world is independent of my will.

6.373 世界是独立于我的意志的。

6.374 Even if all that we wish for were to happen, still this would only be a favour granted by fate, so to

speak: for there is no logical connexion between the will and the world, which would guarantee it, and the supposed physical connexion itself is surely not something that we could will.

6.374 即使我们所希求的一切都会实现，这仍然可以说只是一种命运的恩惠，因为在意志和世界之间没有任何逻辑的联系能保证这一点，而我们自己又毕竟不会想要一种假设的物理的联系。

6.375 Just as the only necessity that exists is logical necessity, so too the only impossibility that exists is logical impossibility.

6.375 正如只有一种逻辑的必然性，也只有一种逻辑的不可能性。

6.3751 For example, the simultaneous presence of two colours at the same place in the visual field is impossible, in fact logically impossible, since it is ruled out by the logical structure of colour.

Let us think how this contradiction appears in physics: more or less as follows—a particle cannot have two velocities at the same time; that is to say, it cannot be in two places at the same time; that is to say, particles that are in different places at the same time cannot be identical. /85/

(It is clear that the logical product of two elementary propositions can neither be a tautology nor a contradiction. The statement that a point in the visual field has two different colours at the same time is a contradiction.)

6.3751 例如，在视野上有两种颜色同时处于一个地点，这是不可能的而且是逻辑上不可能的，因为颜色的逻辑结构排除了这种可能性。

我们再来看一下在物理学上是怎样描写这个矛盾的。大致是下面的说法：一个粒子不可能同时有两种速度；也就是说，它不可能同时处于两个地点；也就是说，同时处于不同地点的粒子不可能是同一的。

（显然，两个原初命题的逻辑积既不可能是一个重言式，也不可能是一个矛盾式。断言视野上一个点同时具有两种不同的颜色，这是一个矛盾式。）

6.4 All propositions are of equal value.

6.4 一切命题都是有同等价值的。

6.41 The sense of the world must be outside the world. In the world everything is as it is, and everything happens as it does happen: in it no value exists—and if it did exist, it would have no value.

If there is any value that does have value, it must lie outside the whole sphere of what happens and is the case. For all that happens and is the case is accidental.

What makes it non-accidental cannot lie within the world, since if it did it would itself be accidental.

It must lie outside the world.

6.41 世界的意义必在世界之外。在世界中一切都如其所是地是，【260】一切都如其发生地发生；在世界中不存在任何价值——如果在世界中存在价值，那么这种价值也不会有任何价值。

如果存在一种有价值的价值，那么它必在一切发生的并如是存在的东西之外。因为一切发生的和如是存在的东西都是偶然的。

使这种有价值的价值成为非偶然的那个东西不能在世界之中，因为否则那个东西本身又会是偶然的了。

它必在世界之外。

6.42 So too it is impossible for there to be propositions of ethics.

Propositions can express nothing that is higher.

6.42 因此，也不可能有任何伦理的命题。

命题不可能表达高渺玄远的东西。

6.421 It is dear that ethics cannot be put into words.

Ethics is transcendental.

(Ethics and aesthetics are one and the same.)

6.421 显然，伦理是不可说的。

伦理是超验的。

（伦理和美学是一个东西。）

6.422 When an ethical law of the form, “Thou shalt. . .”, is laid down, one’s first thought is, ‘And what if I do not do it?’ It is clear, however, that ethics has nothing to do with punishment and reward in the usual sense of the terms. So our question about the consequences of an action must be unimportant.—At least those consequences should not be events. For there must be something right about the question we posed. There must indeed be some kind of ethical reward and ethical punishment, but they must reside in the action itself. /86/

(And it is also dear that the reward must be something pleasant and the punishment something unpleasant.)

6.422 在提出一条具有“汝应……”形式的伦理准则时，人们首先想到的是：如果我不遵行这条准则，那会如何呢？但是，伦理与通常所谓的赏罚没有关系。因此关于一种行为的后果问题必然是无关紧要的。——至少这些后果不应该成为什么事件。因为这个问题的提出必含有某种正确的东西。诚然必须有某一种类的伦理的赏和伦理的罚，但是这些赏罚必然就在行为自身之内。

（而且也很明显，赏必是某种令人愉快的东西，罚必是某种使人不快的东西。）

6.423 It is impossible to speak about the will in so far as it is the subject of ethical attributes.

And the will as a phenomenon is of interest only to psychology.

6.423 意志，作为伦理的东西的载体，是不可说的。

而作为现象的意志则只为心理学所关注。

6.43 If the good or bad exercise of the will does alter the world, it can alter only the limits of the world, not the faces—not what can be expressed by means of language.

In short the effect must be that it becomes an altogether different world. It must, so to speak, wax and wane as a whole.

The world of the happy man is a different one from that of the unhappy man,

6.43 如果善的或恶的意志活动改变世界，那么它只能改变世界的界限，而不能改变事实，不能改变可为语言表达的东西。【261】

简言之，在这种情况下，世界必因而完全变成一个别样的世界。可以说，世界必然作为整体而消长。

幸福者的世界是一个与不幸者的世界不同的世界。

6.431 So too at death the world does not alter, but comes to an end.

6.431 也如在死亡时那样，世界并不改变，而是终止。

6.4311 Death is not an event in life: we do not live to experience death.

If we take eternity to mean not infinite temporal duration but timelessness, then eternal life belongs to those who live in the present.

Our life has no end in just the way in which our visual field has no limits.

6.4311 死不是人生的一个事件。人不可能体验死。

如果不是把永恒理解为无限的时间的绵延，而是理解为无时间性，那么生活在现在之中者就是在永恒地生活着。

我们的人生之为无限，正如我们的视野之为无限。

6.4312 Not only is there no guarantee of the temporal immortality of the human soul, that is to say of its eternal survival after death; but, in any case, this assumption completely fails to accomplish the purpose for which it has always been intended. Or is some riddle solved by my surviving for ever? Is not this eternal life itself as much of a riddle as our present life? The solution of the riddle of life in space and time lies outside space and time. /87/

(It is certainly not the solution of any problems of natural science that is required.)

6.4312 人的灵魂在时间上的不朽，意即它在死后也永世长存，这个假定不仅没有任何保证而且尤其是绝不会给人以他们总想从它得到的东西。我的永世长存难道就会把一个谜解开吗？这种永生岂非像现世的人生一样是一个谜吗？时空中之人生之谜是在时空之外解开的。

(这里要解开的可不是自然科学的问题。)

6.432 How things are in the world is a matter of complete indifference for what is higher. God does not reveal himself in the world.

6.432 世界是怎样的，这对于高渺玄远的东西是完全无关的。上帝不在世界中显现。

6.4321 The facts all contribute only to setting the problem, not to its solution.

6.4321 事实全都是提出问题，而不是作出解答。

6.44 It is not how things are in the world that is mystical, but that it exists.

6.44 神秘的东西不是世界如何，而是世界存在。

6.45 To view the world sub specie aeterni is to view it as a whole—a limited whole.

Feeling the world as a limited whole—it is this that is mystical.

6.45 在永恒的观点下看世界，就是把世界作为一个有限界的整体来看。

对世界之为一有限界的整体的感觉，是神秘的。

6.5 When the answer cannot be put into words, neither can the question be put into words.

The riddle does not exist.

If a question can be framed at all, it is also possible to answer it.

6.5 对于一个不可能说出的解答，我们也不可能说出它的问题来。

没有谜。

如果一个问题确实可以提出，那么它也就可以解答。【262】

6.51 Scepticism is not irrefutable, but obviously nonsensical, when it tries to raise doubts where no questions can be asked.

For doubt can exist only where a question exists, a question only where an answer exists, and an answer only where something can be said.

6.51 怀疑论不是不可反驳的，但是它要在不可提问的地方提出怀疑，则显然是无意义的。

因为怀疑只能存在于有问题存在的地方；问题只能存在于有解答的地方，而解答只能存在于有某物可说的地方。

6.52 We feel that even when all possible scientific questions have been answered, the problems of life remain completely untouched. Of course there are then no questions left, and this itself is the answer.

6.52 我们觉得，即使一切可能的科学问题都被解答了，我们的人生问题还是全然没有触及。当然那时已不再有什么问题留下来了；而这就是解答。

6.521 The solution of the problem of life is seen in the vanishing of the problem.

(Is not this the reason why those who have found /88/ after a long period of doubt that the sense of life became clear to them have then been unable to say what constituted that sense?)

6.521 我们在人生问题的消解中看到了它的解决。

(在长久怀疑之后才明白人生意义的人却不能说出这个意义之所在，其原因不就在这里吗?)

6.522 There are, indeed, things that cannot be put into words. They make themselves manifest. They are what is mystical.

6.522 的确有不可说的东西，它们显示自己，它们是神秘的东西。

6.53 The correct method in philosophy would really be the following: to say nothing except what can be said, i.e. propositions of natural science—i.e. something that has nothing to do with philosophy—and then, whenever someone else wanted to say something metaphysical, to demonstrate to him that he had failed to give a meaning to certain signs in his propositions. Although it would not be satisfying to the other person—he would not have the feeling that we were teaching him philosophy—this method would be the only strictly correct one.

6.53 哲学的正确方法实际上是这样的：除了可说的东西，即自然科学的命题——亦即与哲学无关的东西——之外，不说任何东西，而且每当别人想说某种形而上学的东西时，就给他指出，他没有赋予其命题中的某些指号以任何意谓。对于别人，这种方法也许是不令人满意的，——他大概不会觉得我们是在教他哲学——，但是这却是惟一严格正确的方法。

6.54 My propositions serve as elucidations in the following way: anyone who understands me eventually recognizes them as nonsensical, when he has used them—as steps—to climb up beyond them. (He must, so to speak, throw away the ladder after he has climbed up it.)

He must transcend these propositions, and then he will see the world aright.

6.54 我的命题通过下述方式而进行阐释：凡是理解我的人，当他借助这些命题，攀登上去并超越它们时，最后会认识到它们是无意义的。可以说，在爬上梯子之后，他必须把梯子丢掉。）

他必须超越这些命题，然后才会正确地看世界。

7 What we cannot speak about we must pass over in silence. /89/

7 凡是不可说的东西，必须对之沉默。【263】

INDEX

The translators' aim has been to include all the more interesting words, and, in each case, either to give all the occurrences of a word, or else to omit only a few unimportant ones. Paragraphs in the preface are referred to as P1, P2, etc. Propositions are indicated by numbers without points; more than two consecutive propositions, by two numbers joined by an en-rule, as 202-2021.

In the translation it has sometimes been necessary to use different English expressions for the same German expression or the same English expression for different German expressions. The index contains various devices designed to make it an informative guide to the German terminology and, in particular, to draw attention to some important connexions between ideas that are more difficult to bring out in English than in German.

First, when a German expression is of any interest in itself, it is given in brackets after the English expression that translates it, e.g. **situation** [*Sachlage*] ; also, whenever an English expression is used to translate more than one German expression, each of the German expressions is given separately in numbered brackets, and is followed by the list of passages in which it is translated by the English expression, e.g. **reality** 1. [*Realität*], 55561, etc. 2. [*Wirklichkeit*], 206, etc.

Secondly, the German expressions given in this way sometimes have two or more English translations in the text; and when this is so, if the alternative English translations are of interest, they follow the German expression inside the brackets, e.g. **proposition** [*Satz*: law; principle].

The alternative translations recorded by these two devices are sometimes given in an abbreviated way. For a German expression need not actually be translated by the English expressions that it follows or precedes, as it is in the examples above. The relationship may be more complicated. For instance, the German expression may be only part of a phrase that is translated by the English expression, e.g. **stand in a relation to one another; are related** [*sieb perhalten*: stand, how things; state of things].

Thirdly, cross-references have been used to draw attention to other important connexions between ideas, e.g. **true**, cf. correct; right: and **a priori**, cf. advance, in.

In subordinate entries and cross-references the catchword is indicated by ~, unless the catchword contains /, in which case the part preceding / is so indicated, e.g. **accident; ~al** for **accident; accidental**, and **state of/affairs; ~ things** for **state of affairs; state of things**. Cross-references relate to the **last** preceding entry or numbered bracket. When references are given both for a word in its own right and for a phrase containing it, occurrences of the latter are generally not also counted as occurrences of the former, so **that** both entries should be consulted.

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