- 《爱丽丝漫游仙境》作者刘易斯·卡罗尔（Lewis Carroll）的逻辑学科普作品，集合了卡罗尔逻辑、小说、诗歌等多项特长
- 通过卡罗尔招牌式风趣的语言，以讲故事、做游戏的形式，教授逻辑学知识，边玩边学，寓教于乐，轻松地学会逻辑入门

逻辑的游戏

中英对照

The Game of Logic

[英] 刘易斯·卡罗尔◎著
Lewis Carroll
王旸◎译

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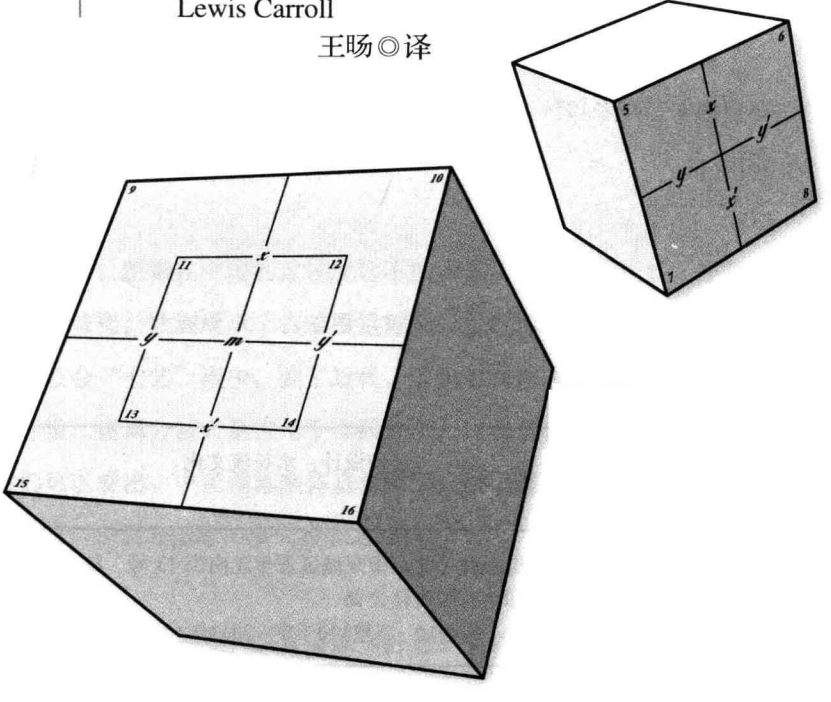

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给爱思考的孩子和爸爸妈妈

让我们一起体验学习和游戏的乐趣

TO My Child-friend

出版者的话

《爱丽丝漫游仙境》是一部经久不衰的儿童作品，这部童话因为其神奇的幻想而风靡世界。作为此书的作者，刘易斯·卡罗尔本人并非职业童话作家，而是牛津大学的数学讲师。

卡罗尔兴趣广泛，对小说、诗歌、逻辑都颇有造诣。从这个角度而言，中间点缀着诗歌、以讲故事的形式教授逻辑的《逻辑的游戏》一书可谓集合了卡罗尔本人的多项特长。通过卡罗尔招牌式风趣的语言，读者可以学到西方最重要一门学识的基础知识。

相比较而言，逻辑在中国的重视度远不如西方。自古希腊开始，逻辑学就是素质教育的必修课。欧洲继承了古希腊重理性、重逻辑的传统，即使在中世纪，逻辑也列在教会“七艺”当中。到了近代，逻辑被当作一门重要的修养课在各类学校普遍开设，逻辑分析大量应用于实践之中，尤其是科研方面。比较中西思维传统，我们可以看出，中国偏重整体直觉顿悟，缺乏逻辑思维传统，这恐怕是我国近代科学落后于西方国家的重大根源之一。

可以说，《逻辑的游戏》正好可以弥补这一空缺，而且其语言的魅力又增加了本书的可读性。《逻辑的游戏》一书中还设置了诸多小游戏，确保了读者可以一边玩一边学，并且可以学以致用，轻松地学会逻辑入门。

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This game requires nine counters — four of one colour and five of another : say four red and five grey.

Besides the nine counters, it also requires one player, at least. I am not aware of any game that can be played with less than this number: while there are several that require more: take cricket, for instance, which requires twenty-two. How much easier it is, when you want to play a game, to find one player than twenty-two ! At the same time, though one player is enough, a good deal more amusement may be got by two working at it together, and correcting each other's mistakes.

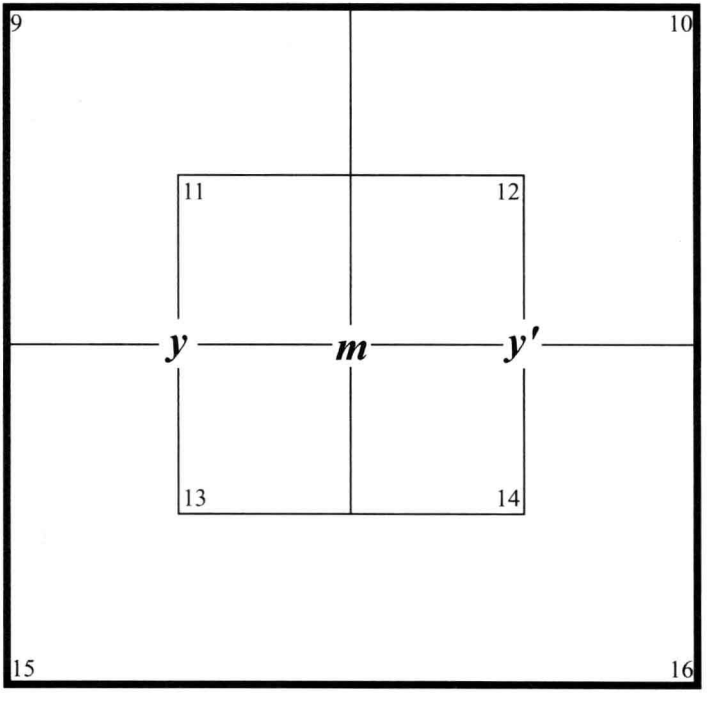
A second advantage, possessed by this game, is that, besides being an endless source of amusement (the number of arguments, that may be worked by it, being infinite), it will give the players a little instruction as well. But is there any great harm in that, so long as you get plenty of amusement?

这个游戏需要九个筹码：四个同一种颜色的，剩下的五个用另外一种颜色。例如，四个红色的和五个灰色的。

筹码准备好以后，即使一个人也可以开始游戏了。我们知道，任何游戏的参与者都不能少于一个人，很多游戏需要多人来参与：比如，板球需要 22 个人。想要玩游戏时，找到一个参与者比找到 22 个参与者要简单许多！虽然游戏一个人就可以玩了，但如果两个人或多个人一起玩并且互相帮助，那么游戏将更加有趣。

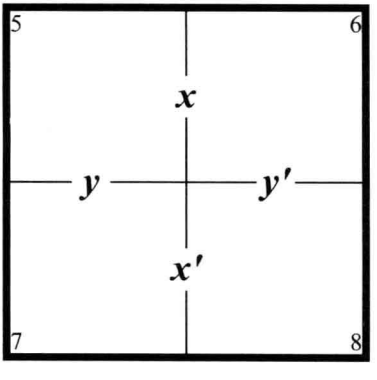
在尽享无穷的乐趣之外（游戏可以有无数个题目），这个游戏的第二个好处就是参与者可以寓教于乐。你至少从游戏中获得了乐趣，这不是已经很好了吗？

接下来的两页内容非常重要，请准备好再开始学习和游戏。



COLOURS FOR COUNTERS

See, the Sun is overhead,
Shining on us, FULL and
RED!
Now the Sun is gone away,
And the EMPTY sky is
GREY!



筹码的颜色

看，天上是太阳，照耀着我们，它是**红色的**！
现在太阳消失了，天空变成了**灰色的**！

备注

开始游戏之前，你应该准备用卡片制作的图表，以及九个筹码（四个红色的和五个灰色的）。

CONTENTS

CHAPTER I. New Lamps For Old / 1

1. Propositions / 2
2. Syllogisms / 31
3. Fallacies / 49

CHAPTER II. Cross Questions / 57

1. Elementary / 58
2. Half of Smaller Diagram. Propositions to be represented / 63
3. Half of Smaller Diagram. Symbols to be interpreted / 66
4. Smaller Diagram. Propositions to be represented / 68
5. Smaller Diagram. Symbols to be interpreted / 71
6. Larger Diagram. Propositions to be represented / 73
7. Both Diagrams to be employed / 77

CHAPTER III. Crooked Answers / 83

1. Elementary / 84
2. Half of Smaller Diagram. Propositions represented / 92
3. Half of Smaller Diagram. Symbols interpreted / 95
4. Smaller Diagram. Propositions represented / 97
5. Smaller Diagram. Symbols interpreted / 100
6. Larger Diagram. Propositions represented / 103
7. Both Diagrams employed / 109

CHAPTER IV. Hit Or Miss / 125

目录

第1章 新灯换旧灯/1

1.命题/2

2.三段论/31

3.谬误/49

第2章 交叉问题/57

1.基本问题/58

2.用一半的小图表来表达命题/63

3.解读一半的小图表所代表的命题/66

4.用小图表表达命题/68

5.解读小图表所代表的命题/71

6.用大图表表达命题/73

7.同时使用两个图表/77

第3章 似是而非的答案/83

1.基本问题/84

2.用一半的小图表来表达命题/92

3.解读一半的小图表所代表的命题/95

4.用小图表表达命题/97

5.解读小图表所代表的命题/100

6.用大图表表达命题/103

7.同时使用两个图表/109

第4章 不是没有可能命中/125

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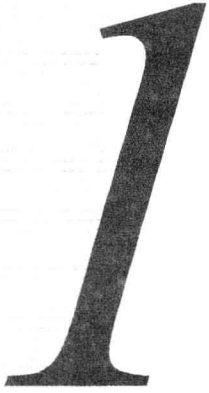
CHAPTER I
New Lamps for Old

"Light come, light go."

第 1 章
新灯换旧灯

“光来，光去”



1. Propositions

1. 命题

"Some red Apples are ripe."
"No red Apples are ripe."
"All red Apples are ripe."

“有些红色的苹果是熟透的。”
“没有红色的苹果是熟透的。”
“全部红色的苹果都是熟透的。”

There are three "*Propositions*" for you—the only three kinds we are going to use in this Game: and the first thing to be done is to learn how to express them on the Board.

这里有三个“**命题**”——我们在这个游戏中只会遇到这三种命题。我们首先要学会如何用图来表达它们。

Let us begin with
"Some red Apples are ripe."

让我们先来看
“有些红色的苹果是熟透的。”

But, before doing so, a remark has to be made—one that is rather important, and by no means easy to understand all in a moment: so please to read this *very* carefully.

在此之前，我先要说一句话——这很重要，而且可能一时半会儿不容易理解：因此，请**仔细**阅读。

The world contains many *Things* (such as "Buns", "Babies", "Beetles", "Battledores", etc.); and these Things possess many *Attributes* (such as

世界上有许多**事物**（比如“包子”、“婴儿”、“甲壳虫”、“羽毛球拍”等），这些事物各有**属性**（比如“烤熟的”、“美丽的”、“黑

"baked", "beautiful", "black", "broken", etc: in fact, whatever can be "attributed to", that is "said to belong to", any Thing, is an Attribute). Whenever we wish to mention a Thing, we use a *Substantive*: when we wish to mention an Attribute, we use an *Adjective*. People have asked the question "Can a Thing exist without any Attributes belonging to it?" It is a very puzzling question, and I'm not going to try to answer it: let us turn up our noses, and treat it with con-temptuous silence, as if it really wasn't worth noticing. But, if they put it the other way, and ask "Can an Attribute exist without any Thing for it to belong to?", we may say at once "No: no more than a Baby could go a railway-journey with no one to take care of it! " You never saw "beautiful" floating about in the air, or littered about on the floor, without any Thing to be beautiful, now did you ?

色的”、“破碎的”；任何“属于”某种事物的特质都可以被称为属性）。当我们提及一个事物时，我们所使用的是一个**实词**；当我们提及一个**属性**时，我们使用的是**形容词**。也许有人会问：“是否有事物没有属性呢？”这是个非常复杂的问题，我并不打算回答它；让我们扬起头，以沉默的态度鄙视它，就好像它根本不值一提吧。但如果又有人把这个问题反过来问：“是否有属性可以独立于事物而存在呢？”此时，我们可以立刻给出一个答案：不行，那就像一个婴儿独自乘坐火车旅行般的不可思议。你不可能看到在空气中漂浮着或在某个地方随意搁置的独立存在的“美丽的”，你看到的是一个美丽的事物，不是吗？

And now what am I driving at,

我如此之长的一段话到底要

in all this long rigmarole? It is this. You may put "is" or "are" between the names of two *Things* (for example, "some Pigs are fat Animals"), or between the names of two *Attributes* (for example, "pink is light-red"), and in each case it will make good sense. But, if you put "is" or "are" between the name of a *Thing* and the name of an *Attribute* (for example, "some Pigs are pink"), you do not make good sense (for how can a Thing be an Attribute?) unless you have an understanding with the person to whom you are speaking. And the simplest understanding would, I think, be this—that the Substantive shall be supposed to be repeated at the end of the sentence, so that the sentence, if written out in full, would be "some Pigs are pink (Pigs)". And now the word "are" makes quite good sense.

说什么呢？让我来告诉你：你用一个“是”来链接两个**事物**（比如“有些猪是肥胖的动物”），或者用它来链接两个**特性**（比如“粉色其实是淡红色”），在这两种情况下，逻辑都是成立的。但如果你用“是”来链接**事物**和**属性**（比如，一些猪是粉色的），除非说者和听者有某种共识，否则这句话的逻辑就值得商榷了（一个事物怎么可能**是**一个属性？）。在我看来，说者和听者之间最基本的共识就是，实词会在句尾重复出现，这样一来，如果这句话被一五一十地写出来，就会变成“有些猪是粉色的（猪）”。此时，中间的“是”字就符合逻辑了。

Thus, in order to make good sense of the Proposition "some red Apples are ripe", we must suppose it

因此，如果想让命题“有些红色的苹果是熟透的”成立，我们一定要把全句写出来：“有些

to be written out in full, in the form "some red Apples are ripe (Apples)". Now this contains two *Terms*—"red Apples" being one of them, and "ripe (Apples)" the other. "Red Apples" being the one we are talking about, is called the *Subject* of the Proposition, and "ripe (Apples)" the *Predicate*. Also this Proposition is said to be a *Particular* one, since it does not speak of the *whole* of its Subject, but only of a *part* of it. The other two kinds are said to be *Universal* because they speak of the *whole* of their Subjects—the one denying ripeness, and the other asserting it, of the *whole* class of "red Apples". Lastly, if you would like to have a definition of the word *Proposition* itself, you may take this: "a sentence stating that some, or none, or all, of the Things belonging to a certain class, called its 'Subject', are also Things belonging to a certain other class, called its 'Predicate'."

红色的苹果(是)熟透的(苹果)"。现在，这句话就有了两个**项**——一个是“红色的苹果”，另一个是“熟透的（苹果)”。其中，“红色的苹果”，是命题的**主语**，而“熟透的（苹果)”则是**谓语**。“有些红色的苹果（是）已经熟透了(的苹果)”这个命题也是一个**特称命题**，因为这个命题没有涉及**全部**苹果，只涉及了**部分**苹果。相比之下，“没有红色的苹果是熟透的”和“全部红色的苹果都是熟透的”这两个命题则是**全称命题**，因为这两个命题涉及全部苹果——一个命题指出**全部**“红色的苹果”都没有熟，另一个指出**全部**“红色的苹果”都已经熟透了。我们可以为**命题**做出以下的定义：“表达一类事物（主语）的全部或部分是否属于另一类东西（谓语）的句子。”

You will find these seven words– *Proposition*, *Attribute*, *Term*, *Subject*, *Predicate*, *Particular*, *Universal*– charmingly useful, if any friend should happen to ask if you have ever studied Logic. Mind you bring all seven words into your answer, and your friend will go away deeply impressed— "a sadder and a wiser man".

如果有人问起你是否学过逻辑学，你的回答中若出现以下七个词（**命题**、**属性**、**项**、**主语**、**谓语**、**特称**、**全称**），回答会十分有效。如果你同时使用了这七个词，你的朋友会被你的学识所折服，还会认为你是一个“充满智慧的人”。

Now please to look at the smaller Diagram on the Board, and suppose it to be a cupboard, intended for all the Apples in the world (it would have to be a good large one, of course). And let us suppose all the red ones to be put into the upper half (marked x), and all the rest (that is, the *not*-red ones) into the lower half (marked x'). Thus the lower half would contain *yellow* Apples, *blue* Apples, *mauve-coloured* Apples—if there are any: I haven't seen many, myself—and so on. Let us also suppose all the ripe Apples to be put into the left-hand half (marked y),

现在，让我们来看那个较小的图表。让我们假设那是一个橱柜，然后想象全世界所有的苹果都在这个橱柜中（我们必须想象那是一个极大的橱柜）。之后，我们会把所有红色的苹果放在橱柜的上半部分（标记为x），其他的苹果（非红色的苹果）则被放在橱柜的下半部分（标记为x'）。这也就是说，橱柜的下半部分放着**黄色的**苹果、**蓝色的**苹果、**淡紫色的**苹果以及其他颜色的苹果——假设它们是存在的，虽然我没有见过这样五颜六色的苹果。现在，让我们想象所

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