

2019 年 4 月 26 日

基因编辑究竟是上帝之手，还是潘多拉魔盒？
经济学家

the perils of drug abuse
吸食毒品的危害。

synthetic materials
合成材料。

The promise and perils of synthetic biology
希望 n. 巨大的危险 合成生物学
成功的前景 险情, 险境

从基因这个概念入手
解释给出了“合成生物学”
这门学科的前景

For the past four billion years or so the only way for life on Earth to

produce a sequence of DNA (a gene) was by copying a sequence (it

Most conflicts arise from ignorance.
大多数冲突都来源于无知。
独立之路

already had to hand. Sometimes the gene would be damaged or scrambled, the copying imperfect or undertaken repeatedly. From that raw material

arise
v. 出现, 产生, 形成
a sequence of v.s. a series of

arose the glories of natural selection. But beneath it all, gene beget gene.

sequence 更强调事情的先后顺序, e.g. 他按先后顺序描述了那天情况
series 对于先后顺序就没有那么严格的要求, a series of accidents 一连串的事故但事故发生的顺序就不那么重要

随着科技进步,
基因生基因,
这个生命的根本
原理也发生了变化

That is no longer true. Now genes can be written from scratch and edited repeatedly, like text in a word processor. Immune cells can be told

to follow doctors' orders; stem cells better coaxed to turn into new tissues;

Bees fertilise the flowers by bringing pollen.
蜜蜂可以给花授粉

fertilised eggs programmed to grow into creatures quite unlike their parents.

The scale of the potential changes seems hard to imagine. To harness the

promise and minimise the peril, it pays to learn the lessons of the past.

e.g. His friends coaxed him into talking about his own problems.
在朋友的劝说和诱导下, 他说出了自己的问题。

e.g. He built his own company from scratch.
他白手起家建立了自己的公司。

作者所说的颠覆性
指的是人类和生物圈
关系的三次重大变革

The earliest biological transformation—domestication—produced

what was hitherto the biggest change in how humans lived their lives. This

allowed new densities of settlement and new forms of social organisation:

使...变得可能 population density
= enable 前所未有的人口密度

unprecedented 前所未有的



由 扫描全能王 扫描创建

the market, the city, the state.

cascade n. 瀑布
v. 像瀑布一般地落下.
domino effect 多米诺骨牌效应

Synthetic biology will have a similar cascading effect, transforming
级联效应 伴随状态
humans' relationships with each other and, potentially, their own biological

nature. The ability to reprogram the embryo is, rightly, the site of most of
/embriou/ 潜在的, 可能地 (possibly)
重新编辑, 改编 n. 胚胎 正当的, 合理的 地点, 现场
today's ethical concerns. How humans may choose to change themselves

道德的, 伦理的 主语从句 /kontra'vɜ:ʃl/ 有争议的
biologically is hard to say; that some choices will be controversial is not. (hard to say)

It will challenge the human capacity for wisdom and foresight. It might
合成生物学 智慧 远见卓识
defeat it. But carefully nurtured, it might also help expand it.
/nɜ:rtʃər/ 养育, 培育.

超出突破
if Synthetic Biology is

for- 向前
sight 景象

