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The promise and perils of synthetic biology
合成生物学的希望与危机

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 already had to hand. Sometimes the gene would be damaged or scrambled, the copying imperfect or undertaken repeatedly. From that raw material arose the glories of natural selection. But beneath it all, gene begat gene.
在过去大约 40 亿年中，地球上的生物制造出一串 DNA（基因）的唯一方法，就是复制手边已有的序列。有的时候，由于不完全或重复的复制，这些基因可能会被损坏或者被打乱顺序。自然选择的辉煌壮丽就诞生于这些原材料中。但是在这一切复杂变化之下，最基本的原理其实就是基因生基因。
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; 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.
不过这已不再是真理。现在人们可以从零开始编写基因，并且反复地编辑，就像在文字处理器中的文本一样。人们可以让免疫细胞听从医生的指令；可以更好地诱导干细胞再生成新的组织，可以编辑受精卵的基因，孕育出与他们的父母相当不同的生物。不过，这一技术发展引发的潜在变化将达到什么样的规模，似乎很难想象。想要利用它好的一面，并且将风险降至最低，我们需要吸取过去的经验教训。
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: the market, the city, the state.
最早的生物转化——驯化，对人类生活方式产生了迄今为止最大的变化。这让更高密度的群居生活和全新的社会结构——市场、城市、国家——变得可能。
Synthetic biology will have a similar cascading effect, transforming humans' relationships with each other and, potentially, their own biological nature. The ability to reprogram the embryo is, rightly, the site of most of today's ethical concerns. How humans may choose to change themselves biologically is hard to say; that some choices will be controversial is not. It will challenge the human capacity for wisdom and foresight. It might defeat it. But carefully nurtured, it might also help expand it.
合成生物学将会有类似的级联效应，会改变人与人之间的关系，并有可能改变人类自身的生物特性。对胚胎编辑的能力，引发了当今大多数的伦理忧虑，这合乎情理。人类会做出什么选择来改变自身的生物特性，这一点很难说；但可以确信的是，有些选择定会引起争议。它（合成生物学）将挑战人类智慧和远见的能力边界。它可能会突破这一边界，但经过精心的扶持，它也有可能拓宽这个边界。

—— The Economist：The promise and perils of synthetic biology

重点词汇
peril/'perəl/
n. 巨大的危险；险情，险境
e.g.
英文释义：The perils of sth. are the dangers or problems it may involve.
搭配短语：the perils of drug abuse（吸食毒品的危害）
synthetic biology
合成生物学
e.g.
synthetic 搭配短语：synthetic materials（合成材料）
a sequence of
一连串，一系列
e.g.

英文释义：A number of things that come one after another in a particular order.
词义辨析：a sequence of, a series of
sequence 更强调事情的先后顺序，比如 He described the events of that day in sequence. 他按先后顺序描述了那天的情况，而 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了。
scramble/'skræmbl/
v. 打乱（单词或字母使之不再有任何含义）
e.g.
搭配短语：scrambled eggs（炒蛋）
arise/ə'raɪz/
v. 出现；产生，形成
e.g.
例句：Problems have arisen.
例句：Difficulties arose.
例句：Most conflicts arise from ignorance.
beget/bɪ'ɡet/
v. 导致；成为…的父亲
e.g.
英文释义：to cause or bring about
例句：Poverty begets debts.
from scratch
从零开始；白手起家
e.g.
例句：He built his own company from scratch.
coax/koʊks/
v. 哄劝，哄骗，劝诱
e.g.
例句：His friends coaxed him into talking about his own problems.
fertilise/'fɜːrtəlaɪz/
v. 使受精，使受孕，使受粉
e.g.
例句：Bees fertilise the flowers by bringing pollen.
harness/'hɑːrnɪs/
v. 控制；利用…的动力
e.g.
英文释义：control and make use of
例句：Harness the sun’s rays as a source of energy.
domestication/dəˌmestɪ'keɪʃn/
n. 驯化，驯养

e.g.
词性拓展：domesticate (v.)
英文释义：the process of bringing animals or plants under human control in order to provide food, power, or company
hitherto/ˌhɪðərˈtuː/
adv. 迄今为止
e.g.
近义词：so far
density/ˈdensəti/
n. 密度
e.g.
搭配短语：population density（人口密度）
cascade effect
级联效应
e.g.
相关词汇：cascade（n. 瀑布；v. 像瀑布一般地落下）
相关词汇：domino effect（多米诺骨牌效应）
embryo/ˈembrioʊ/
n. 胚胎
nurture/ˈnɜːrtʃər/
v. 养育，培育