1、Even my most private and personal reflection are entangled with the perspectives and voices of different people, be it those who agree with me, those who criticize, or those who praise me.

即使是我最私密、最个人的反思，也缠绕着不同人的视角与声音，无论是赞同我、批评我还是赞扬我的人。

2. The 17th-century French philosopher believed that a human being was essentially self-contained and self-sufficient; an inherently rational, mind-bound subject, who ought to encounter the world outside her head with skepticism. While Descartes didn't single-handedly create the modern mind, he went a long way towards defining its contours.

十七世纪的法国哲学家（指笛卡尔）认为，人本质上是独立自足的；是一个内在理性、受心智束缚的主体，应以怀疑的态度面对自己头脑之外的世界。虽然他并非单枪匹马创造了现代心智，但在界定其轮廓方面，他贡献良多。

3. He wanted to find a stable point of view from which to look on the world without relying on God-decreed wisdoms; a place from which he could discern the permanent structures beneath the changeable phenomena of nature. But Descartes believed that there was a trade-off between certainty and a kind of social, worldly richness.

他希望找到一个稳定的视角来观察世界，而不依赖神启的智慧；一个能让他看透变幻的自然现象之下永恒结构的立足点。但笛卡尔认为，在确定性与社会性、世俗性的丰富体验之间，存在着一种取舍。

4. But even then, the investigation often presumes that a collective of Cartesian subjects are the real focus of the enquiry, not selves that co-evolve with others over time.

但即便如此，这类研究往往假定，笛卡尔式主体（即独立的、理性的个体）的集合才是探究的真正焦点，而非那些随时间与他人共同演进的自我。

5. Genovese's murder had to be seen against a backdrop in which violence against women was not taken seriously, Cherry said, and in which people were reluctant to step into what might have been a domestic dispute.

切丽说，看待热诺维斯谋杀案时，必须置于这样的背景之下：针对女性的暴力在当时不受重视，且人们往往不愿介入可能属于家庭纠纷的事件。

6. Think of that luminous moment when a poet captures something you'd felt but had never articulated; or when you'd struggled to summarize your thoughts, but they crystallized in conversation with a friend.

回想那些灵光乍现的时刻：诗人捕捉到了你曾感受却从未言明的思绪；或是你苦苦思索如何总结自己的想法，却在与朋友的交谈中豁然开朗。

7. By contrast, "dialogical" theories brought to life in experiments such as Lisa Freund's "doll house study" from 1990, emphasize interactions between the child and the adult who can provide "scaffolding" for how she understands the world.

相比之下，在丽莎·弗罗因德 1990 年的"娃娃屋研究"等实验中生动体现的"对话式"理论则强调，儿童与成人之间的互动至关重要，成人可以为儿童理解世界提供"支架"。

8. But for the most part, scientific psychology is only too willing to adopt individualistic Cartesian assumptions that cut away the webbing that ties the self to others.

但在很大程度上，科学心理学过于乐于接受笛卡尔式的个人主义假设，这些假设切断了将自我与他人联结起来的网络。

9. According to the lieutenant governor, Thomas Stamford Bingley Raffles, to whom volcanologists are indebted for his accounts of the eruption, the detonation was so loud that it was mistaken across Java for cannon fire, causing consternation among the British troops, which had

ousted the Dutch and French forces just a few years earlier.

据副总督托马斯·斯坦福·宾利·莱佛士记述——火山学家们对其火山喷发记录深表感谢——爆炸声如此巨大，以至于在整个爪哇岛被误认为是炮火，引起了几年前刚刚驱逐了荷兰与法国军队的英国驻军的恐慌。

10. In addition to the ash, an estimated 200 million tonnes of microscopic sulphur particles pumped into the stratosphere, spread outwards from Sumbawa to form a giant aerosol veil that enclosed the planet and acted as a block to incoming sunlight.

除了火山灰，估计还有两亿吨微小的硫磺颗粒被喷射到平流层，从松巴哇岛向外扩散，形成了一个巨大的气溶胶帷幕，包裹了整个地球，并阻挡了入射的阳光。

11. Such was the degree of breakdown of food supply that economic historian John Post has called the episode "the last, great subsistence crisis in the Western world."

食品供应崩溃的程度如此严重，以至于经济史学家约翰·波斯特称这一事件为"西方世界最后一次重大的生存危机"。

12. Should the European harvest fail, so the thinking goes, we can always buy our food from elsewhere.

按照这种思路，即便欧洲的收成失败，我们也总可以从其他地方购买粮食。

13. The very interconnectedness of world markets may, however, make things worse - the collapse of food production across Europe, parts of North America and perhaps elsewhere, could result in global shortages which in turn would drive a dramatic rise in the cost of food commodities.

然而，世界市场的高度互联性本身可能使情况更糟——遍及欧洲、北美部分地区及其他地方的粮食生产崩溃，可能导致全球性短缺，进而引发粮食商品价格的急剧上涨。

14. At the same time, the intense worldwide competition for food supplies, scarce as a consequence of the harvest failures, could drastically reduce the range of products available in the UK, interfere with supply and distribution, and bring about a collapse of the supermarkets' ultra-sensitive, time-critical, stock-control systems, leaving their shelves increasingly depleted.

同时，由于歉收导致的粮食供应稀缺，全球范围内的激烈竞争可能会大幅减少英国可获得的产品种类，干扰供应与分销，并导致超市极度敏感、对时间要求苛刻的库存控制系统崩溃，使得货架日益空空如也。

15. On top of this, harvest disruption in response to volcano weather might extend far beyond Europe, and might - in ensuing decades - be exacerbated by the consequence of rampant climate change.

此外，因火山天气导致的收成中断可能远不止于欧洲，并且在随后的几十年里，还可能因气候变化失控的后果而加剧。

16. While we can't stop the next Tambora, nor handle its potential impacts on the climate and the harvest, we can ensure that contingency plans are in place to keep everyone adequately fed until the sulphur veil dissipates and temperatures return to normal.

虽然我们无法阻止下一个坦博拉火山喷发，也无法处理其对气候和收成的潜在影响，但我们可以确保制定好应急计划，以便在硫磺帷幕消散、气温恢复正常之前，每个人都能获得足够的食物。

17. Looking back at previous episodes of dramatic climate warming provides us with plenty of robust evidence for a vigorous volcanic response, most notably as our world heated up rapidly at the end of the last Ice Age.

回顾过去剧烈的气候变暖事件，为我们提供了大量强有力的证据，表明火山活动会有强烈的响应，最显著的就是在上一个冰河时代末期，我们的世界迅速变暖之时。

18. The longer the wait, the bigger the bang. That rule of thumb is borne out by the fact that fully half of the biggest eruptions since 1800 originated at volcanoes that had previously been dormant throughout history.

等待越久，爆发越猛。这条经验法则被一个事实证明：自 1800 年以来，那些最大的火山喷发中，足足有一半源自于历史上先前一直处于休眠状态的火山。

19. Without the 1968 experiments of Kendall, Friedman and Taylor at the Stanford Linear Accelerator Center (SLAC), quarks would have remained a mere theory, a will-o'-the-wisp whose existence was confidently postulated but never proven.

如果没有肯德尔、弗里德曼和泰勒 1968 年在斯坦福直线加速器中心的实验，夸克将仅仅停留于理论，成为一个虽被自信地假设存在但从未被证实的幻影。

20. People similarly know about Wolfgang Pauli and Enrico Fermi stating the requirement for a ghostly particle called the neutrino in the 30s, but ask popular science enthusiasts if they are aware of the dogged pursuit of the neutrino by Raymond Davis for over 30 years and you will likely see knitted brows.

人们同样知道沃尔夫冈·泡利和恩里科·费米在三十年代提出了对一种名为中微子的"幽灵粒子"的需求。但如果你问科普爱好者是否知道雷蒙德·戴维斯对中微子超过三十年的执着追寻，你很可能会看到他们皱起眉头。

21. This gap in perception is especially startling given the singular importance of experiment in physics and all of science, a central paradigm that has been the centerpiece of the scientific method since Galileo (apocryphally) dropped iron balls from the leaning tower of Pisa.

考虑到实验在物理学乃至所有科学中的独特重要性——这是自伽利略（据传）从比萨斜塔上扔下铁球以来科学方法的核心范式与基石——这种认知上的差距就格外令人吃惊。

22. It seems to me that there are at least two important reasons why the public, in spite of tacitly appreciating the all-important role of experiment in physics, fails to give experimentalists their due.

在我看来，公众尽管默然理解实验在物理学中的极端重要性，却未能给予实验物理学家应有的认可，这至少有两个重要原因。

23. Compared to their efforts based on pure thought, the corresponding efforts of experimentalists who get down on their knees, liberally coat their hands with grease and spend most of their time soldering electronic circuits and fashioning precision machine parts on a lathe sound humdrum and boring.

与理论家基于纯粹思考的努力相比，实验物理学家们跪在地上、双手沾满油污、大部分时间都花在焊接电路和在车床上制作精密机械零件上的相应努力，听起来就显得平淡乏味。

24. To be fair though, it's hard not to admire theorists when many experimentalists, as ingenious as their contraptions are, "simply" validate things which the theorists have already said.

不过公平地说，当许多实验物理学家，尽管其装置设计巧妙，却"仅仅"验证了理论家早已预言的事情时，很难不让人钦佩理论家。

25. Firstly however, it's very important to realise that all the awe for Einstein which we rightly feel comes only after the fact, after a thousand increasingly demanding tests of general relativity have established the veracity of the theory beyond any doubt.

然而，首先必须认识到非常重要的一点：我们对于爱因斯坦的所有敬仰，都是后验的，是在经过上千次日益严苛的检验，确凿无疑地证实了广义相对论的真实性之后才产生的。

26. Experimentalists often follow in the steps of theorists, but the instances in which they lead the way are as full of creativity and achievement as the work of an Einstein, Bohr or Feynman.

实验物理学家常常跟随理论家的脚步前行，但在那些他们引领道路的实例中，其工作充

满了与爱因斯坦、玻尔或费曼同等的创造力与成就。

27. If we want to improve the public visibility of experimentalists and place experimentalists in their rightful place in the pantheon of popular physics, the main initiative would have to come from experimentalists themselves.

如果我们想提高实验物理学家在公众中的可见度，并使他们在大众物理学的殿堂中占据应有的位置，主要需由实验物理学家自己采取主动。

28. In addition, the manipulation of these tools to plumb the depths of nature's secrets is every bit as exciting to its practitioners as calculating the curvature of space-time is to its own.

此外，对这些工具的操控以探究自然奥秘的深处，对其从业者而言，其激动人心的程度丝毫不亚于计算时空曲率对理论家而言。

29. Maths becomes beautiful through the power and elegance of its arguments and formulae; through the bridges it builds between previously unconnected worlds.

数学因其论证与公式的力量与优雅而变得美丽；因其在先前互不相连的世界之间搭建的桥梁而变得美丽。

30. For those who learn the language, maths has the same capacity for beauty as art, music, a full blanket of stars on the darkest night.

对于那些学会了这门语言的人而言，数学拥有与艺术、音乐，以及最黑暗夜空中铺满的繁星同等的创造美的能力。

31. Brain scans of mathematicians show that gazing at formulae considered beautiful by the beholder elicits activity in the same emotional region as great art and music.

对数学家的脑部扫描显示，凝视被观察者认为是美丽的公式，能引发与欣赏伟大艺术和音乐时相同情感脑区的活动。

32. The power of an equation to connect what seem like completely unrelated realms of mathematics comes up often.

一个方程式能够联结看似完全无关的数学领域，这种力量常常显现。

33. More than 2,000 years ago, the ancient Greek mathematician Euclid solved a numerical puzzle so beautifully that it still makes Neale smile every time it comes to mind.

两千多年前，古希腊数学家欧几里得完美地解决了一个数字谜题，其解答之美至今仍让尼尔每次想起时都面露微笑。

34. With a grasp of the formulae, we can understand blood flow in the body, make boats glide through the water, and build awesome chocolate enrobers.

掌握了这些公式，我们就能理解体内的血液流动，让船只在水面滑行，并制造出令人惊叹的巧克力涂层机。

35. Shocking at first pass, Dirac captured what is now a common sentiment When a beautiful equation seems at odds with nature, the fault may lie not with the maths, but in applying it to the wrong aspect of nature.

狄拉克（的话）初听令人震惊，却道出了如今一种常见的观点：当一个美丽的方程式似乎与自然不符时，过错可能不在于数学本身，而在于将其应用于了自然的错误方面。

36. Whereas computers use zeros and ones to store and manipulate data, the neurons in our brains transmit information in binary, on/off spikes known as action potentials.

计算机使用 0 和 1 来存储和处理数据，而我们大脑中的神经元则以二进制、"开/关"式的尖峰脉冲（称为动作电位）来传递信息。

37. This basic similarity is what underlies the burgeoning field of computational neuroscience, which hopes to understand how neuronal networks give rise to processes like memory and facial

recognition so that they might be replicated in intelligent machines.

这种基本的相似性正是蓬勃发展中的"计算神经科学"领域的基础，该领域希望理解神经网络如何产生记忆和面部识别等过程，以便能在智能机器中复制这些过程。

38. The central problem remains We have no real understanding of how the brain gives rise to the mind, of how neurons and action potentials create consciousness.

核心问题依然存在：我们并未真正理解大脑如何产生心智，神经元和动作电位如何创造意识。

39. If they could accurately recreate the behaviors and structures of a biological brain, their computer simulation should shed light on both normal cognition and disorders like depression and schizophrenia.

如果他们能精确地重建生物大脑的行为和结构，他们的计算机模拟应该能阐明正常的认知过程以及如抑郁症和精神分裂症等障碍。

40. And this invention of analogy relies not on analytic problem-solving thought but on letting your mind drift from one thought to another in a sort of free-associative state, says Gelernter.

格勒恩特尔说，这种类比的创造并非依赖于分析性的解决问题思维，而是依赖于让你的思维在一种自由联想的状态下，从一个想法漂移到另一个想法。

41. Though there may not be an exact word to describe this nuanced emotion, the mind can recognize it and can connect two very different scenes that may have inspired the same emotion.

尽管可能没有一个确切的词来描述这种微妙的情绪，但心智能够识别它，并能联结起可能激发了相同情绪的两种迥异的场景。

42. The other difficulty with emotion - and the reason why computers won't ever be able to experience emotions the way humans do - is that they are produced by an interaction between the brain and the body working together.

情绪的另一个难点——也是计算机永远无法像人类一样体验情绪的原因在于，情绪是大脑与身体协同工作的产物。

Solitary 单独的，独处的
Scaffold 支架；脚手架
Inscribe 刻写；铭刻
Contour 轮廓；外形
Purport 声称；主旨
Wipe away 擦去；消除
Axiomatic 公理的
Contextual 上下文的；
Testify 证明；作证
Confine 限制；局限于
Scenario 方案；情景
Feasible 可行的；可能的
Facilitate 促进；使便利
Reinforce 加强；加固
Colossal 巨大的；庞大的
Episode 插曲；事件；
Ensuing 随后发生的；
Implication 含义；暗示；
Contraption 奇妙的装置；
Ingenious 巧妙的；
Tacit 默示的；心照不宣
Conjecture 推测；猜想
Mundane 平凡的；世俗
Humdrum 单调的；乏味
Veracity 真实性；诚实
Admonish 告诫；劝告
Delicacy 精致；微妙；
Supremacy 霸权
Practitioner 实践者
Tribute 致敬；贡品
Proponent 支持、倡导者
Curvature 曲率；弯曲
Postulate 假定；公设
Verify 验证；证实
Proliferate 激增；扩散
Manipulation 操控；操纵
Confound 使混淆；挫败
Ultimate 最终的；根本的
Underlying 潜在的；根本
Compelling 引人注目的；
Diversity 多样性；差异
Fallible 不可靠
Multidimensional 多维的
Indivisibility 不可分割
Elicit 引出；引起
Give rise to 引起；导致
Emergent 新兴的；浮现
Monopolize 垄断；独占
Simulate 模拟；模仿
Burgeoning 迅速发展的；生机勃勃的
Infinitesimally 无穷小地；
Underlie 构成...的基础
Haunt 萦绕；常去（某地）