**Unit 1**

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

即使是我最私人和个人的思绪，也与不同的人的观点和声音交织在一起，不管是那些赞同我的人，那些批评我的人，还是那些赞扬我的人。

2. We know from everyday experience that a person is partly forged in the **crucible** of community.

从日常经验中得知：人的个性由社会环境造就的。

3 A person is considered a standalone entity, irrespective of her surroundings, **inscribed** in the brain as a series of cognitive processes.

人被认为是一个独立的个体，由一系列记录在大脑中的认知过程组成，与外界环境无关。

4. Deprived of contact and interaction – the external perspective needed to **consummate** and sustain a coherent self-image – a person risks disappearing into non-existence.

失去了接触和互动——完善和维持连贯的自我形象所需的外部视角——一个人就有可能完全消失。

**Unit 2**

1. According to the lieutenant governor, Thomas Stamford (later Sir 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.

火山学家们非常感激副总督托马斯·斯坦福德(后来成为斯坦福德爵士)宾利·莱佛士对于此次爆炸的描述。据他所说，坦博拉火山爆炸的声音如此之大，以至于驻扎在爪哇岛的英国军队以为又开战了，从而引起了他们的极大恐慌，因为他们几年前才把荷兰和法国军队驱逐出。

2. After five days of relative calm, the climactic phase of the eruption began with a colossal explosion that launched a towering column of ash to the edge of space.

经过相对平静的五天之后，一声巨响宣告了火山爆发的高潮，喷发的火山灰烬柱入云，直逼天际。

3. For four or five days, utter blackness reigned across the island as the hurricane blasts of hot ash and scalding gas – known as pyroclastic flows – scoured the flanks of the volcano of everything and everyone, and drifts of ash metres thick entombed what few signs of life remained.

在接下来的四五天里，整个岛屿都笼罩在一片漆黑之中，炽热的山灰和滚烫的气体——即火山碎屑流，像飓风一样吞噬了火山翼侧的一切事物，数米厚的火山灰掩盖之处死寂沉沉，几乎没有任何生命迹象。

4. The top 500m of the volcano was gone, blasted into smithereens, and replaced by a 6km-wide maw from which steam spiralled skywards.

500米的火山顶部被炸成了碎片，取而代之的是一个6公里宽的火山口，蒸汽从火山口盘旋而上。

5. These, perhaps, were the lucky ones, as a further 60,000 survivors of the eruption succumbed slowly and agonisingly to famine or disease.

这些人或许是幸运的，因为还有6万名火山爆发的幸存者慢慢地、痛苦地死于饥荒或疾病。

6. The alleged cultural implications of this “volcano weather” for Europe are somewhat whimsical.

这种所谓的“火山天气”对欧洲的文化影响有些异想天开。

7.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”.

食物短缺问题十分严重，经济历史学家约波斯特称这时期是“西方世界最近一次严重的生存危机。”

8. 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.

另外，火山天气导致的歉收可能会延伸到欧洲以外的地区，而在接下来的几十年里歉收现象可能会因猖獗的气候变化而愈演愈烈。

9. No volcano erupts without warning signs, caused by rising magma triggering earthquake swarms and inflating the ground surface.

没有一座火山会毫无征兆地爆发。由上升的岩浆引发的地震群和膨胀的地表就是明显的火山爆发预警。

**Unit 3**

1. I started mulling over this vivid gap between the public’s appreciation of theorists vs experimentalists on reading a post by physics professor Chad Orzel who, taking a cue from my post about famous American physicists, makes the cogent point that while American theorists lagged behind their European counterparts until the post-war years, they were almost equal to the Europeans even in the 1920s.

物理学教授Chad Orzel的一篇帖子引发了我对于公众对理论物理学家和实验物理学家鲜明的认知差距的思考。Chad教授的文章其实也是受我关于美国著名物理学家的帖子的启示，他提出了一个有力的观点：尽管直到战后，美国理论家的地位落后于欧洲同行，但即使在20世纪20年代，他们也几乎与欧洲人平起平坐的。

2.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.

鉴于实验在物理学及所有科学领域中独特的重要性，这一认知差距使人尤为吃惊。自伽利略比萨斜塔铁球实验（据传言）以来，实验就是科学研究的中心范式和主要方法。

3.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.

尽管公众清楚实验在物理学中重要作用，但他们却未给予实验物理学家应有的认可。在我看来，这至少有两个重要的原因。

4. Nobody can fail to gasp in awe at an Einstein or Bohr who, working with a few facts and pencil and paper, **divine** grand operating principles for the cosmos in short order.

没有人不对爱因斯坦或玻尔敬畏，因为他们仅用纸、笔，基于一些事实，短时间内就推算出了宇宙的宏大运行原理。

5. 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 sounds humdrum and boring.

与纯粹的思想相比，那些跪在地上、双手涂满油脂，把大部分时间花在焊接电子电路和在车床上加工精密机械零件上的实验人员的相应努力听起来单调乏味。

6. In a previous post I mentioned how the public has been fed increasingly exotic and speculative physics fare that tends to influence their opinion about what they consider are the most important fields in physics.

在之前的一篇文章中，我提到了公众是如何被大众媒体上越来越多的奇异和投机性的物理内容所吸引，而这些内容往往会影响他们对物理学中最重要的领域的看法。

7.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 spacetime is to its own.

此外，巧用这些工具探究自然的奥秘，对实验物理学家来说，就像计算时空曲率对理论物理学家一样令人兴奋。

**Unit 5**

1. 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. (Para. 1)

计算机使用0和1来存储、处理数据，而我们大脑中的神经元则以二进制形式的、被称为动作电势的开/关尖峰来传输信息。

2. 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.

（两者之间的）这一基本的相似性奠定了新兴的计算神经科学领域的基础，该学科希望了解神经元网络是如何完成记忆和面部识别等过程的，以便将它们应用到智能机器中。

3.The central problem remains: we have no real understanding of how the brain gives rise to the mind, of how neurons(神经元) and action potentials(动作电位) create consciousness.

核心问题仍然存在：我们对大脑如何产生思维，神经元和动作电位如何产生一时都没有真正的了解。

4.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.

格伦特尔说，这种类比的产生不是依赖于分析性的解决问题的思维方式，而是取决于是否让大脑处于自由联想状态，让大脑能够在不同想法间自由切换。