

TPO 39 – 1 Early Writing Systems 早期文字系统

Scholars agree that writing originated somewhere in the Middle East, probably Mesopotamia, around the fourth millennium B.C.E. It is from the great libraries and word-hoards of these ancient lands that the first texts emerged. They were written on damp clay tablets with a **wedged (or V-shaped) stick**; since the Latin word for wedge is *cunea*, the texts are called cuneiform. The clay tablets usually **were not fired**; **sun drying** was probably **reckoned** enough to preserve the text for as long as it was being used. Fortunately, however, many tablets survived because they were accidentally fired when the buildings *they were stored in* burned.★

学者们认为，早在公元前四世纪，书写便起源于中东的某个地方，也许是美索不达米亚。从这些古老土地上的图书馆和词库中，最早的文字诞生了。这些文字使用楔形（v 字形）木棍写在湿的黏土平板上的。因为楔形物的拉丁语是 *cunea*，这些文字被叫做 cuneiform（楔形文字）。这些黏土板通常**不用火烤**，放在太阳下面自然晾干也许被认为足够将这些文字永久保存了。幸运的是，有些黏土板幸存了下来，当存放黏土板的房子着火了之后，这些黏土板就偶然间被火烤了。

Cuneiform writing lasted for some 3,000 years, in a vast line of succession that ran through Sumer, Akkad, Assyria, Nineveh, and Babylon, and preserved for us fifteen languages in an area represented by modern-day Iraq, Syria, and western Iran. The oldest cuneiform texts recorded the **transactions** of tax collectors and merchants, the receipts and bills of sale of an urban society. They had to do with things like grain, goats, and **real estate**. Later, Babylonian scribes recorded the **laws** and kept other kinds of records. Knowledge **conferred** power. As a result, **the scribes were assigned their own goddess**, Nisaba, later replaced by the god Nabu of Borsippa, **whose** symbol is neither weapon nor dragon but something far more fearsome, the cuneiform stick.★

楔形文字持续了三千年的时间，跨越了苏美尔、古巴比伦阿卡德区、亚述帝国、尼尼微城、巴比伦，在现今的伊拉克、叙利亚和伊朗西部地区保存下来 15 种语言。最久远的楔形文字记录了税务员和商人之间的交易，城市生活中的买卖的收据和账单。这其中包含了谷物、山羊和**房产**。之后，巴比伦的文吏记录了法律并且保存了其他一些记录。知识赋予力量。抄书吏确定了他们自己的神，尼沙巴，之后又被博尔西帕的纳布神取代，他的标志既不是武器也不是龙，而是更加可怕的东西——楔形文字的棍子。

Cuneiform texts on science, astronomy, medicine, and mathematics **abound**, some offering astoundingly precise data. One tablet records the speed of the Moon over 248 days; another documents an early sighting of Halley's Comet, **from September 22 to September 28, 164 B.C.E.** More **esoteric** texts attempt to explain old Babylonian customs, such as the procedure for curing someone who is ill, which included **rubbing tar** and gypsum on the sick person's door and drawing a design at the foot of the person's bed. What is clear from the vast body of texts (some 20,000 tablets were found in King Ashurbanipal's library at Nineveh) is that

批注 [1]: 强调句型:

It is... that...

批注 [2]: **word-ward**

英美

n. 词汇表; 个人词汇量

批注 [3]: **reckon**

英 ['rekən] 美 ['rekən]

•vt. 测算, 估计; 认为; 计算

•vi. 估计; 计算; 猜想, 料想

批注 [4]: ★这段在说什么?

首先引入主题: 书写的起源;

然后介绍这个主要对象【题】:

最后描述一下咋保存的。【题】

批注 [5]: **confer**

英 [kən'fɜ:r] 美 [kən'fɜ:r]

•vt. 授予; 给予

•vi. 协商

批注 [6]: ★这段在说什么?

首先说一下文字历史悠久;

然后说历史文字都记录了什么内容【题】以及产生了什么影响

【题】。

批注 [7]: **abound**

英 [ə'baʊnd] 美 [ə'baʊnd]

•v. 大量存在, 有许多; 富于, 充满

批注 [8]: **esoteric**

英 [i:zə'terɪk; ,esə'terɪk] 美 [i:zə'terɪk]

•adj. 只有内行才懂的; 难领略的, 深奥难懂的; 极不寻常的; 限于小圈子的

scribes **took pride in** their writing and knowledge. ★

有大量的楔形文字是关于科学、天文学、医学和数学，一些包含了非常精确的数据。一个板上记录了超过 248 天的月亮移动的速度，另一个则记录了目睹到的哈雷彗星，时间是公元前 164 年的 9 月 22 日至 9 月 28 日。一些更加深奥的文字试图解释古巴比伦文明的习俗，比如，治疗病人的步骤，包括在病人的门上涂抹沥青和石膏，并在病人的床脚画个符号。可以从大量的文字（大约两万块黏土板在尼尼微城的亚述巴尼拔国王的图书馆中被发现）中清晰得知的是，文吏们对他们的书写和知识非常自豪。

The **foremost** cuneiform text, the Babylonian Epic of Gilgamesh, deals with humankind's attempts to conquer time. In it, Gilgamesh, king and warrior, **is crushed by** the death of his best friend and so **sets out on adventures** that prefigure mythical heroes of ancient Greek legends such as Hercules. His goal is not just to survive his **ordeals** but to make sense of this life. **Remarkably**, versions of Gilgamesh **span 1,500 years**, between 2100 B.C.E and 600 B.C.E., **making the story** the epic of an entire civilization. ★

最早的楔形文字，巴比伦的《吉尔伽美什史诗》，是关于人类征服时间的尝试的。吉尔伽美什，既是国王也是位勇士，因他最要好的朋友的死亡**深受打击**，因此开启了冒险之旅，他是古希腊神话中的神话英雄比如赫尔克里斯的雏形。他的目标不仅是免受苦难的折磨，而且是使生命更加有意义。不可思议的是，《吉尔伽美什史诗》的不同版本横跨了 1,500 年，从公元前 2100 年到公元前 600 年，使得这个故事成了整个巴比伦文明的叙事诗。

The ancient Egyptians invented **a different way of writing** and a new substance to write on—papyrus, a precursor of paper, made from a wetland plant. The Greeks had a special name for this writing: hieroglyphic, literally "sacred writing." **This, they thought, was language fit for the gods**, which explains why it was carved on walls of **pyramids** and other religious structures. Perhaps hieroglyphics are Egypt's great contribution to the history of writing: hieroglyphic writing, in use from 3100 B.C.E. until 394 C.E., **resulted in the creation** of texts that were fine art as well as communication. Egypt gave us the tradition of the scribe not just as educated person but as artist and calligrapher. ★

古埃及人发明了一种不同的书写方式以及书写材料——纸草，这是纸张的前身，由一种湿地植物制作而成。希腊人给这种书写起了个特殊的名字：象形文字，字面意思是“神圣文字”。他们认为这种语言适合神明，这就解释了为什么他们把文字刻在金字塔的墙上或者其他宗教建筑上。或许象形文字是埃及对于书写史的重大贡献：象形文字从公元前 3100 年开始使用，直到公元 394 年，形成了既是艺术又是交流工具的文本。埃及人给我们留下一一种书写的传统，（书写的人）不仅仅是受过教育的人，也是艺术家和书法家。

Scholars have **detected** some 6,000 separate hieroglyphic characters in use over the history of Egyptian writing, but it appears that never more than a thousand were in use during any one period. It still seems a lot to **recall**, **but what was lost in efficiency was more than made up for in the beauty and richness of the texts**. Writing **was meant to** impress the eye with the vastness of creation itself. Each symbol or glyph—*the flowering reed (pronounced like "i"), the owl ("m"), the quail chick ("w"), etcetera*—was a tiny work of art. Manuscripts were

批注 [9]: **take pride in**

英 美 [teɪk praɪd ɪn]

•v. 以...为傲

批注 [10]: ★这段在说什么？

首先引出文字记录的学科是丰富的；

然后深入说例子【题】，并总结一下。

批注 [11]: **foremost**

英 ['fɔ:məʊst] 美 ['fɔ:rməʊst]

adj. 最重要的；最先的

adv. 首先；居于首位地

first and foremost

英 美

首先；首要的是

批注 [12]: **ordeal**

英 [ɔ:'di:ɪ; 'ɔ:di:ɪ] 美 [ɔ:r'di:ɪ]

•n. 折磨；严酷的考验；痛苦的经验

批注 [13]: ★这段在说什么？

首先说最早的楔形文字的作用；然后根据这个作用引出一段描述。

批注 [14]: 这个破折号很重要：

解释说明

批注 [15]: ★这段在说什么？

首先引出另一种材料；

然后引出另一种文字（很重要，原来全篇不是只说的楔形文字，还有另一种！不要混淆！从题目也可以看出——如果是说楔形文字，题目可能就是 **cuneiform text** 了）。

接着介绍一下这个文字【题】以及影响。

compiled **with an eye to** the overall design. Egyptologists have noticed that the glyphs **that constitute individual words** were sometimes shuffled to make the text **more pleasing to the eye with little regard** for sound or sense. ★

学者们在埃及的书写历史中发现了大约 6,000 个独立的象形文字，但是似乎在任何一个时期内被使用的文字数量从不会超过一千个。似乎还有很多文字**需要找回**，**但是在效率上的损失却被文字的美感以及丰富性所填补**。书写的**本意就是**用巨大的创新性来制造视觉震撼效果。每一个符号或者字符都是件小型艺术品—美人蕉（发音如同 V），猫头鹰（发音如同 M），小鹤鹑（发音如同 W），等等。手稿与文字的整体设计相符合。埃及古物学家注意到，组成单个单词的字符有时候被随机安插，使得文字**更加好看**，而文字的发音或者含义却**很少被关注**。

批注 [16]: with an eye to

[wɪð ən aɪ tu]

着眼于...; 指望着...

考虑到...; 注意到...

批注 [17]: regard

英 [rɪ'gɑ:d] 美 [rɪ'gɑ:rd]

- n. **注意**; 尊重; 问候; 凝视
- vt. **注重**, 考虑; 看待; 尊敬;
把...看作; 与...有关
- vi. **注意**, 注重; 注视

批注 [18]: ★这段在说什么?

首先说象形文字的多样，然后又
说很多丢失了。

接着引出丢失的部分可以被美感
补充;

最后进一步解释这个美感

【题】。

TPO 39 – 2 The Extinction of Moa 恐鸟的灭绝

Between 80 and 85 million years ago, Gondwanaland, a giant continent made up of what today is Africa, Antarctica, Australia, and South America, broke up, thus causing what is now New Zealand to become separated from the larger landmass. After the separation, any creature unable to cross a considerable distance of ocean could not migrate to New Zealand. Snakes and most mammals evolved after the separation. Thus there are no New Zealand snakes, and bats, which flew there, and seals, which swam there, were the only mammals on New Zealand when Polynesian settlers (the Maori) arrived there about a thousand years ago.

在八千万年至八千五百万年前，冈瓦纳大陆——一个由现今的非洲、南极洲、大洋洲和南美洲组成的巨大大陆——解体了，导致现在的新西兰从大陆上分离出去。在此之后，任何不能游过中间这片海洋的动物都没法移居到新西兰。蛇和大多数哺乳动物都是在这次分离之后演化的。因此新西兰没有蛇，飞过去的蝙蝠和游过去的海豹是新西兰上仅有的哺乳动物，这种状况一直持续到波利尼西亚人（毛利人）一千年前抵达那里之前。

When the Maori arrived in New Zealand, they encountered birds that had been evolving for 80 million years without the presence of mammalian predators. The most striking of these animals must have been moa. Now extinct, moa were gigantic wingless birds that stood as much as 10 feet (3 meters) tall and weighed as much as 550 pounds (250 kilograms). They are known from a diverse array of remains including eggshells, eggs, a few mummified carcasses, vast numbers of bones, and some older fossilized bone. The species of moa that are currently recognized occupied ecological niches customarily filled elsewhere by large mammalian browsing herbivores. They may have had relatively low reproductive rates; apparently, they usually laid only one egg at a time.

当毛利人到达新西兰的时候，他们遇到了那些进化了八千万年而从没遇到过哺乳动物捕食者的鸟。这其中最引人注意的非恐鸟莫属。恐鸟是一种非常高大、没有翅膀的鸟，站立起来可以达到 10 英尺（3 米）高，体重可以达到 550 磅（250 千克），它们现在已经灭绝了。它们因为各种各样的遗迹而被世人知晓，这些遗迹包括蛋壳、蛋、一些木乃伊化了的尸体、大量的骨头和一些古老的化石化了的骨头。恐鸟在新西兰生态圈的位置等同于其他地方的大型哺乳类食草动物。它们繁殖率相对较低，很显然，它们通常一次只生一个蛋。

It seems possible that when Captain James Cook first visited New Zealand in 1769, moa (or at least one of the moa species) may have still survived in the remote areas in the western part of New Zealand's South Island. If so, these individuals would have been the last of their kind. Climatic conditions in New Zealand appear to have been relatively stable over the period during which moa became extinct. Different factors could have worked in concert to account for their abrupt disappearance.

当库克船长 1769 年第一次抵达新西兰的时候，恐鸟（或者至少是和恐鸟一个类别的鸟）可能仍然存活于新西兰南岛的西部边远地区。如果真的是这样的话，这些鸟已经是这类鸟的最后一批了。在恐鸟灭绝期间，新西兰的天气状况似乎是比较平稳的。不同的因素共同导致了恐鸟的突然消失。

Vegetation was considerably altered by the Maori occupation of New Zealand, a change not easily explained by climate variation or other possible factors. Forest and shrubland burning appears to have reduced the prime habitat of many moa species. However, the main forest burning started around 700 years ago, after what current archaeological evidence indicates was the most intensive stage of moa hunting. While there appears to have been extensive burning on the east side of New Zealand's South Island, large forest tracts remained in the most southern part of the island. Because major habitat destruction seems to have occurred after moa populations already were depleted, and because some habitat that could have sheltered moa populations remained, it would seem that other factors were also at work in the extinction of these birds.

在毛利人占领了新西兰之后，植被就被大幅度地改变了，这种变化是不能简单地用气候变化或其他可能的因素来解释的。对恐鸟类的动物而言，森林和灌木丛的燃烧使得它们的主要栖息地范围缩小了。然而，主要的森林大火开始于 700 年前，在此之前是当代考古证据表明捕猎恐鸟最为密集的时期。新西兰的南岛的东部地区发生了大范围的燃烧，但岛屿的南部仍保留有大面积的森林。因为主要栖息地的破坏是在恐鸟数量已经大量减少之后才发生的，并且仍有一些栖息地保存了下来，导致这些恐鸟灭绝的原因似乎还有其他因素在起作用。

For South Island, human predation appears to have been a significant factor in the depletion of the population of moa. At one excavated Maori site, moa remains filled six railway cars. The density of Maori settlements and artifacts increased substantially at the time of the most intensive moa hunting (900 to 600 years ago). This period was followed by a time of decline in the Maori population and a societal transition to smaller, less numerous settlements. The apparent decline fits the pattern expected as a consequence of the Maori's overexploitation of moa.

在南岛，人类的捕食是恐鸟数量大量减少的重要因素。在一个发掘出土的毛利人遗址，恐鸟遗骸装满了六节火车车厢。毛利人口密度和人工制品的大量增长恰好是在大量猎杀恐鸟的时期（900 至 600 年前）。这段时间之后，毛利人口数量减少，聚居区变得更小，人数也更少了。这一变化正是毛利人过量捕杀恐鸟的后果。

Finally, the Maori introduced the Polynesian rat and the dog to New Zealand. The actions of these potential nest predators could have reduced moa populations without leaving much direct evidence. The Maori may have also inadvertently brought pests and disease organisms in fowls, which could have crossed over to eradicate moa populations. The possibility of analyzing ancient DNA to identify past diseases of extinct animals is being explored. However, evidence of such diseases is difficult to determine directly from paleoecological or archaeological remains. For these reasons, it is hard to determine the likelihood that introduced disease organisms were a cause of the decline of moa, but they are potentially significant.

最后，毛利人将波利尼西亚鼠和狗引进了新西兰。这些潜在的巢掠食者可能导致了恐鸟数量的减少而没有留下什么直接的证据。毛利人也可能不经意间将害虫和致病有机体带给禽类，这也可能相互传染从而导致了恐鸟的灭绝。通过研究灭绝了的动物的 DNA 来判断它曾经得

过的疾病的办法已经被探讨过了。但是，这些疾病的证据很难直接从古生物学和考古学遗迹上得到。因为这些原因，很难判定致病有机体的引入是导致恐鸟数量下降的原因，但是这的确是个潜在的重要因素。

While the last of these possible causes remains speculative, definite clues exist for the action of the first two causes. The story of moa species and their demise raises ecological issues on the vulnerability of species to human-caused changes-including altered vegetative cover of the landscape, change in the physical environment, and modification of the flora and fauna of a region by eliminating some species and introducing others.

尽管这些原因中的最后一个仍然是个推断，前两个原因似乎是有些道理的。恐鸟灭绝的故事表明，人类活动造成的生态环境的改变使得物种变得非常脆弱，这些改变包括自然环境的改变、通过消灭一些物种并引入其他物种而造成一个地区动植物的改变。

TPO 39 – 3 Forest Fire Suppression 林火扑灭

Forest fires have recently increased in intensity and extent in some forest types throughout the western United States. This recent increase in fires has resulted partly from climate change (the recent trend toward hot, dry summers) and partly from human activities, for complicated reasons that foresters came increasingly to understand about 30 years ago but whose relative importance is still debated. One factor is the direct effect of logging, which often turns a forest into something approximating a huge pile of kindling (wood for burning): the ground in a logged forest may remain covered with branches and treetops, left behind when the valuable trunks are carted away; a dense growth of new vegetation springs up, further increasing the forest's fuel loads; and the trees logged and removed are of course the biggest and most fire-resistant individuals, leaving behind smaller and more flammable trees. 近期, 发生在美国西部地区的一些森林中的森林火灾, 无论是强度还是范围, 都有所增加。近期火灾的上升趋势一部分是由于气候变化(夏天变得更热更干燥), 另一部分是由于人类活动。由于一些比较复杂的原因, 护林人 30 年前就愈发认识到这一问题了, 但是人类活动的重要性现在却仍存在争议。一个因素是伐木作业的直接影响, 伐木将森林变成一大堆引火物(等待被点燃的柴火): 被砍伐了的森林的地面上仍会被树枝和树梢覆盖, 更有价值的树干则被运走了; 新的植被密集生长出来, 进一步增加了森林里的燃料总量; 被砍伐和运走的树木肯定是最的也是最耐火的, 剩下的都是小树和更加易燃的树木。

Another factor is that the United States Forest Service in the first decade of the 1900s adopted the policy of fire suppression (attempting to put out forest fires) for the obvious reason that it did not want valuable timber to go up in smoke, or people's homes and lives to be threatened. The Forest Service's announced goal became "Put out every forest fire by 10:00 A.M. on the morning after the day when it is first reported." Firefighters became much more successful at achieving that goal after 1945, thanks to improved firefighting technology. For a few decades the amount of land burnt annually decreased by 80 percent. That happy situation began to change in the 1980s, due to the increasing frequency of large forest fires that were essentially impossible to extinguish unless rain and low winds combined to help. People began to realize that the United States federal government's fire-suppression policy was contributing to those big fires and that natural fires caused by lightning had previously played an important role in maintaining forest structure.

另一个因素是美国林业局在二十世纪头十年采取的灭火政策, 很显然他们不想让有价值的木材付之一炬, 也不想让人们的家和生命安全受到威胁。林业局声称的目标是“在接到火灾报告的第二天早上十点之前扑灭任何一个森林大火”。1945 年之后, 由于灭火技术的发展, 消防员在达成这一目标上做的更加成功了。数十年间, 每年发生火灾的土地数量降低了 80%。这一乐观的形势在二十世纪八十年代发生了改变, 因为不断发生的森林大火, 除非在雨水和低风的联合作用下, 否则几乎不可能被扑灭。人们逐渐意识到, 是联邦政府的灭火政策导致了这些大火的发生, 因为之前, 由闪电引导的自然火灾在维持森林构成方面起到了重要的作用。

The natural role of fire varies with altitude, tree species, and forest type. To take Montana's low-altitude ponderosa pine forest as an example, historical records, plus counts of annual

tree rings and datable fire scars on tree stumps, demonstrated that a ponderosa pine forest experiences a lightning-lit fire about once a decade under natural conditions (i.e., before fire suppression began around 1910 and became effective after 1945). The mature ponderosa trees have bark two inches thick and are relatively resistant to fire, which instead burns out the understory—the lower layer—of fire-sensitive Douglas fir seedlings that have grown up since the previous fire. But after only a decade's growth until the next fire, those young seedling plants are still too low for fire to spread from them into the crowns of the ponderosa pine trees. Hence the fire remains confined to the ground and understory. As a result, many natural ponderosa pine forests have a parklike appearance, with low fuel loads, big trees spaced apart, and a relatively clear understory.

火灾的自然角色随着海拔高度、树木的种类和森林类型而异。以蒙大拿州的低海拔的美国黄松林作为例子。历史记录、每年的年轮以及树桩上可以确定年代的火灾留下的疤痕都表明，在自然状态下，黄松林差不多每十年就要遭受一次由雷电引起的大火（也就是说，在灭火政策于1910年开始执行并于1945年后取得成效之前）。成熟的黄松树树皮有两英寸厚，相对而言比较不易燃，着火的往往是上次火灾之后生长出来的道格拉斯冷杉幼苗，它们是森林的下层植被。但是仅在这十年间长出来的幼苗仍然太矮，而不足以让火势蔓延至黄松树的树冠上去。因此大火仅在地面和下层植被间燃烧。因此许多自然生长的黄松林有点像公园，燃料量很少，树与树之间的间距大，下层植物比较少。

However, loggers concentrated on removing those big, old, valuable, fire-resistant ponderosa pines, while fire suppression for decades let the understory fill up with Douglas fir saplings that would in turn become valuable when full-grown. Tree densities increased from 30 to 200 trees per acre, the forest's fuel load increased by a factor of 6, and the government repeatedly failed to appropriate money to thin out the saplings. When a fire finally does start in a sapling-choked forest, whether due to lightning or human carelessness or (regrettably often) intentional arson, the dense, tall saplings (young trees) may become a ladder that allows the fire to jump into the crowns of the trees. The outcome is sometimes an unstoppable inferno. 但是，伐木工人正考虑砍除这些又大又老，很有价值又耐火的黄松树，因为多年来的灭火政策使得下层生长的道格拉斯冷杉幼树一旦生长成熟也可以变得非常有价值。每英亩的树木数量从30株上升至200株，森林里的燃料总量增长了6倍，而政府又迟迟不能拿出拨款来减少幼苗的数量。当长满幼苗的森林一旦开始着火，不管是由于雷电还是由于人类的疏忽，或者是非常令人遗憾的蓄意纵火，那些长得很高的幼苗可能变成了梯子，将火苗引至大树的树冠上。结果就会造成无法遏制的地狱之火。

Foresters now identify the biggest problem in managing Western forests as what to do with those increased fuel loads that built up during the previous half century of effective fire suppression. In the wetter eastern United States, dead trees rot away more quickly than in the drier West, where more dead trees persist like giant matchsticks. In an ideal world, the Forest Service would manage and restore the forests, thin them out, and remove the dense understory by cutting or by controlled small fires. But no politician or voter wants to spend what it would cost to do that.

护林人现在意识到，管理西部森林时面临的最大的问题在于如何处理这些不断增加的燃料总量，

这些燃料是在过去的半个世纪间由于有效的灭火政策而积聚起来的。在更加潮湿的美国东部，槁木比在更加干燥的西部腐烂的更快，在西部，更多的槁木像巨大的火柴棒一样存留在地面上。在理想的情况下，林业局应该对森林进行管理和修复，增加树木间距，通过砍伐或者可控的小范围燃烧去除稠密的下层植被。但是没有政客或者选民愿意花费这笔钱。