

3.3 - Economic CHANGES & CONTINUITIES in the 17th-18th

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1. 释义

At the end of the 17th century, a massive 巨大的 revolution in farming occurred /and is known as the Agricultural Revolution 农业革命. So this video is all about how that happened /and how it shifted 改变 the economic foundations 经济基础 of Europe.

So if you' re ready to get them brain cows milked Jethro Tull' s style, then let' s get to it.

Prior to 在.....之前 this period, about 80 percent of the people in Europe lived and died by farming 以务农为生.

England and the Dutch Republic being accepted — and we' ll get to that in a minute 我们马上就会讲到 — and while 主 the farming techniques 农业技术 we' ve talked about elsewhere, like *the two field system* 二圃制 and *the three field systems* 三圃制, 系 were able to feed (v.) a lot of people, for the most part 在大多数情况下 /crops yielded (v.)产出 only enough to survive (v.) /and certainly not an abundance 大量.

Additionally 此外, about every eight to ten years 大约每八到十年, some insane 疯癫的, 精神失常的;十分愚蠢的; 疯狂的; 危险的 climate event 极端气候事件 caused (v.) crop failures 作物歉收 In large portions of the country, people went hungry, and many of them died.

But by the turn of 到...的时候 the 18th century, farming in Britain and the Dutch Republic 谓 began to shift, and 主 the methods that they pioneered (v.)开创,当开拓者 谓 would eventually spread (v.) to the rest of Europe.

But what' s crazy is that in those places, only about half the population was devoted to 致力于 farming, and yet the output 产量 of their farms tripled (v.)增至三倍. If you want to know how they did it, I' m about to tell you.

First of all, they abandoned (v.)放弃 the three field system. For all the benefits it brought 尽管它带来了很多好处, it still required a third of the land **to lie (v.) fallow** 休耕 each year. The reason is because 主 the constant threat 持续威胁 to farmers 系 was soil exhaustion 土壤肥力耗尽, meaning that in order to grow food, the soil **gave up** its nutrients 养分 **to** the plants, and if you plant (v.) enough crops in the same soil, all the nutrients will eventually be gone.

But now 主 what the English and Dutch discovered 系 is that if they alternated (v.)交替 grain crops 谷物, which leached (v.)过滤 ; 滤去 nutrients from the soil 从土壤中吸取养分, with other crops which restored (v.)恢复 (某种情况或感受) nutrients to the soil like potatoes and clover 三叶草, then their fields could produce (v.) crops 农作物 with no yearly *fallow (a.)*休耕的 ; 不活跃的 *period* 无需每年休耕.

And clover was especially important /because it put nitrogen 氮 back in the soil, which was perhaps one of the most important nutrients 养分.

Example 1. 案例

leach

[VN] ~ **sth (from sth) (into sth)** | ~ **sth out/away** : (of a liquid液体) to remove chemicals, minerals, etc. from soil 过滤 ; 滤去

- The nutrient is quickly leached away.养分很快就被滤掉了。

clover



Who cares? What' s the point 有何意义? The point is, my dear interlocutor 对话者 ; 谈话者, is that with this innovation 创新 in farming, the food output (n.)产量;输出功率 ; 输出量 rose (v.) significantly 显著地, which also led to a population increase 人口增长, and that' s going to become significant later 这在后面会变得很重要. So put that in your pocket, and we' ll come back to it later.

Now **along with** 连同 new ways of planting, new technologies for farming also helped (v.) increase (v.) crop yield 作物产量. For example, Jethro Tull' s *seed drill* 条播机 and mechanical hoe 机械锄头. The seed drill made sure that /the seeds were planted at exact intervals 精确间隔 and then covered them with dirt 覆土, while the mechanical hoe was able to increase efficiency 效率 **with which** the weeds were removed from the soil 除草.

But wait, there' s more. Remember the Columbian Exchange 哥伦布大交换 from the last period? That was the result of European exploration 探索 in the Americas, and 主 one of the big items being exchanged 系 was food. Many different kinds of beans 豆类 came into Europe as a result of it.

Maybe the most significant American crop to be transferred 引进 was the potato 土豆. Originally 最初, Europeans **felt like** they were too good for potatoes 最初 , 欧洲人觉得他们配不上土豆. Like they reckoned 认为 /it was good food for livestock 牲畜 but not for their table. 就像他们认为这是牲畜的好食物 , 但不是他们的餐桌.

But in time 随着时间推移, the potato became a staple 主食, (某国的) 主要产品 , 支柱产品 of the peasantry 农民, and it significantly improved (v.) their lives /because it was packed with nutrition 富含营养, and a small crop 庄稼 ; (谷物或水果的) 收成 , 产量 could feed (v.) a family heartily (极为 ; 极其;尽情地 ; 关怀地 ; 劲头十足地) 丰盛地.

Example 2. 案例
seed drill



staple

→ 英语单词staple通常表示“订书针”，但还可以表示“主要产品、主要成分、主食”等含义。这两种看似毫不相干的含义怎么存在于同一个单词呢？原来，staple来自古英语，**本意就是事物的“支柱或主干”，与staff同源**。订书针的两个针脚形如两根柱子，所以被称为staple。而古代的市场或仓库通常都立有柱子，所以staple又衍生出“市场、仓库”之意，后来又进一步用来表示市场中销售或仓库中存放的主要物品。

staple : ['stepl] n.订书针，主要产品，主要成分，主食adj.主要的，大宗生产的，常用的vt.钉住
stapler : ['steplə] n.订书机，主要商品批发商

So 主 all of this taken together 一并考虑,综上所述 系 is what we call the Agricultural Revolution, and it **both** increased *the amount of food* available in Europe /**and** contributed to 有助于 longer *life spans* 寿命 among the population.

Now this population explosion 人口激增, combined with 与.....相结合 the fewer people needed for farming, meant that a lot of people didn't have enough work, and that reality **contributed to** another significant economic change during this period, namely 即 the rapid expansion 快速扩张 of the cottage 小屋，村舍，乡间别墅 industry 家庭手工业.

Example 3. 案例
cottage



Now you probably know what a cottage 小屋 is—it's a little house—and you probably know what industry means—it means *making goods for sale* 生产商品用于销售. So put them together, and what do you get? Making goods for sale in your little house, and that is the cottage industry.

With fewer and fewer people needed for farming, rural households 农村家庭 needed to supplement 补充 their earnings with the cottage industry. Now the cottage industry was organized according to *the putting-out system* 外包制,外放制, and here's what that means: Merchant 商人 capitalists 商人资本家 would provide raw materials 原材料 to rural workers, who would then manufacture (v.)制造 those materials into finished goods 制成品. Merchant would pay (v.) the worker /and then go sell the finished goods on the market 市场. This arrangement 安排 **laid (v.) the groundwork for** 为.....奠定基础 the Industrial Revolution's factory system 工业革命的工厂制度, but we'll get to that in another video.

Example 4. 案例
putting-out system

发包制度：一种生产方式，商人将原材料发放给农民或家庭工人，由他们在家中加工，然后收回加工好的产品，再进行销售。

Now the cottage industry in rural areas was creating (v.) a significant stir (搅动，搅拌；激动 (情绪)，愤怒 (情绪)) 引起轰动, not least because it began **competing (v.) with** 与...竞争 urban guild (由工作、目标或兴趣相同的人组成的) 协会 workers 城市行会工人 in the cities. If you were an artisan 工匠 and wanted **to get paid** 获得报酬 for your work, you had to be a guild member 行会成员, and if you were a member, you had a certain amount of prestige 声望 and protection for your wage 工资保障. And if you were not a member—in typical non-members included 典型的非成员包括 women and immigrants 移民 and Jews 犹太人—then you had to **scratch** 挠，轻抓 **out a living** 勉强维持生计 on the margins of society 社会边缘.

But with the putting-out system, 主 those folks who were previously **consigned (v.)**把...置于 (令人不快的境地)；打发；发落 **to** 被置于 the margins 谓 could work, albeit 虽然，尽管 for pretty low wages, **apart from** 除了.....之外 membership in a guild 无需加入行会. So 主 that 系 was a significant way in which 主 labor and trade 谓 **were increasingly freed (v.) from** traditional restrictions 传统限制 后定 imposed (v.) by governments and corporate entities 政府和企业实体.

Example 5. 案例 guild

→ 来自PIE*gheldh, 付款，支付，词源同yield. 来自加入行会前需支付的入门费。

consign

(formal)[VN]

1. ~ **sb/sth to sth** : to put sb/sth somewhere in order to get rid of them/it (为摆脱而) 把...置于，把...交付给

• I consigned her letter to the waste basket. 我把她的信丢进了废纸篓。

• What I didn' t want was to see my mother **consigned to** an old people' s home. 我所不愿意的是看到我母亲被送进养老院。

2. ~ **sb/sth to sth** : to put sb/sth in an unpleasant situation 把...置于 (令人不快的境地)；打发；发落

• The decision to close the factory **has consigned** 6 000 people **to** the **scrap heap** (废品堆) . 关闭那家工厂的决定使 6 000人遭到了遗弃。

• A car accident **consigned him to** a wheelchair /for the rest of his life. 一次车祸使他落得在轮椅上度过余生。

3. to give or send sth to sb 交给；交付；寄送

→ con-, 强调。-sign, 记号，标记。



The growth of this kind of market economy 市场经济 **led to** an increasing demand for manufactured goods 制成品, which meant **there was a push to get** manufacturing **out of** people' s homes **and into** these new buildings called factories 工厂.

And nowhere 无处，哪里都不 was this shift 转变 more pronounced 明显的，显著的；讲出来的 than in England. The British wool industry 英国羊毛产业 was **second to none** 首屈一指的. The putting-out system enabled (v.) many workers **to specialize (v.) in** their trade (行业；职业；生意) 专注于各自的工作. Some **raised (v.) sheep**, others **processed (v.) wool**, and still others **wove (v.)** (用手或机器) 编，织；把(线)编成(织物) **fabric** 织布, and then still others dyed (v.) 染色.

And as Europeans began demanding (v.) more and more wool, Britain increased its production 产量, which led to more people working and earning decent wages 可观的工资 **to boot** 此外. Now the merchants paid (v.) the workers directly 直接支付工资, and that led to a growing money economy 货币经济 — which, in case you couldn't discern (v.) 辨别, is an economy that **runs (v.) on money** — and the growing money economy **worked (v.) hand in hand with** 与.....携手 the growing market economy /to create (v.) a seismic (a.) 地震的，地震引起的；影响深远的，重大的 economic shift 巨大的经济变革 in Europe.

Example 6. 案例

to boot

(old-fashioned humorous) used to add a comment to sth that you have said (用作附带评述) 而且，另外，加之

• He was a vegetarian, and a fussy (a.) 爱挑剔的，难取悦的 one **to boot**. 他是个素食主义者，而且过于讲究。

seism

→ From Ancient Greek σεισμός (**seismós**, “**shaking**; earthquake”).

Now **market economy** 市场经济 is one **in which** production and prices are determined strictly by competition between **privately owned businesses** 私营企业之间的竞争. Remember that after this period, mercantilism 重商主义 was the dominant economic system 主导经济体系 of Europe. This system was driven by the state 由国家主导, so it was the state who **set prices** and determined production schedules 生产计划.

But in 1776, Adam Smith published the book **The Wealth of Nations** 国富论, in which he critiqued (v.) 批判；评论 mercantilism /and argued for 主张 an **unregulated (a.)** 未受控制的，无管理的；未经调节的，未校准的 **market** 自由市场 which would be governed (v.) by **the forces of supply and demand** 由供求关系调节. To be clear 明确地说, there is not a hard line 明确界限 where mercantilism stopped (v.) and market economies started (v.), but in this period we're in that muddy (a.) 泥泞的，多泥的 transition phase 模糊的过渡阶段.

Regardless 无论如何, the growth of the market economy **led to** new financial practices and institutions 金融实践和机构, and I'm going to tell you about two.

First was the introduction of insurance 保险. For monthly premium 每月保险费；(正常价格或费用以外的) 加付款，加价) 月保费, insurance companies would recoup (v.) 收回 (成本)；弥补 (亏损)；弥补 an entrepreneur's losses 企业家的损失 if something catastrophic 灾难性的 happened, like a fire destroying a factory.

With this kind of security 保障, entrepreneurs 企业家, especially in England, gained the

confidence **to invest** (v.) metric but loads of money 大量资金 **into** the *factories* and *growing (a.) inventories* 存货 of goods for sale 不断增加的待售商品库存.

Example 7. 案例
recoup

→ 来自 re-, 向后, 往回, -coup, 砍, 切, 词源同 coup, coupon, cope. 原义 为减少成本, 弥补损失, 后用于指收回成回。

Second was the rise of *banks* and *venture capital* 风险资本. Prior to 在.....之前 1750, if you were an entrepreneur /and wanted to build a factory, for example, they would have to borrow money from family /or have a fortune of their own 依靠自己的财富. But with this explosion of commerce 商业繁荣 /and the rise of the factory system 工厂制度兴起, specialty banks 专业银行 arose /which kept only some of the money people deposited (存放; 储存; 放置) 保留部分存款 /and then **loaned** (v.) 借出, 贷款 the rest **out** as venture capital 贷出其余资金作为风险资本 **to be paid (v.) back** with interest 还本付息, 即银行贷出储蓄, 赚回利息.

但随着商业的爆炸式增长, 和工厂制度的兴起, 专业银行出现了, 它们只保留"人们存入的一部分钱", 然后将其余的钱作为风险资本借出, 并带着利息偿还。

And so /with this development of the market economy, Europe had **laid a foundation for** 为.....奠定基础 its expanding (a.) global role 不断扩大的全球角色, of which more in another video.

Okay, right here the rest of my unit 3 videos, so **get** that *clicky (a.) finger out* /and click. Additionally 此外, if you need help getting an A in your class /and a five on your exam, then grab my note guides 笔记指南 for these videos right here. Thanks for coming along, I' ll catch you on the flip-flop. I' m Laurent out.

2. 本文中的常识

2.1. seed drill

A seed drill is a device /used in agriculture /that sows (v.) 播种 seeds for crops /by positioning (v.) 定位; 放置 them in the soil /and burying them to a specific depth /while being dragged by a tractor 拖拉机, 牵引机. This ensures (v.) that /seeds will be distributed (v.) evenly.

播种机是一种农业设备, 它把农作物种子放入土壤中, 埋入特定深度, 然后用拖拉机牵引, 从而确保种子均匀分布。

The *seed drill* sows (v.) the seeds at the proper *seeding rate* 播种量, 播种密度 and depth, ensuring that the seeds are covered by soil. This saves (v.) them from being eaten (v.) by birds and animals, or being dried up **due to** exposure to the sun. With *seed drill* machines, seeds are distributed (v.) in rows; this allows (v.) plants to get sufficient sunlight and nutrients from the soil.

播种机以适当的播种频率和深度播种, 确保种子被土壤覆盖。这样可以防止种子被鸟类和动物啃食, 或因暴晒而干枯。播种机将种子成排播种, 使植物能够从土壤中获取充足的阳光和养分。

Before the introduction of the *seed drill*, most seeds were planted by *hand broadcasting* 手工撒播, an imprecise 不精确的; 不严密的; 不确切的 and wasteful process with a poor distribution of seeds 种子分布 and low productivity 生产率. The use of a *seed drill* can improve the ratio of crop yield 农作物产量 (*seeds harvested* 收成 per *seed planted*) by **as much as** 与.....一样多 eight times. The use of *seed drill* saves (v.) time and labor.

在播种机出现之前, 大多数种子都是手工撒播的, 这种方法不精确, 浪费资源, 种子分布不均匀, 生产效率低下。使用播种机可以将作物产量 (每播种一粒种子收获的种子数量) 提高八倍之多。使用播种机节省时间和劳动力。

Before the operation of *a conventional* 传统的; 常规的 *seed drill* 条播机, hard ground has to be plowed (v.) 犁地 and harrowed (v.) 耙地 /to soften (v.)使变软 it enough /to be able to get the seeds to the right depth 深度 /and make a good "seedbed" 苗床, **providing** the right mix 混合 of *moisture* 水分, *stability* 稳定性, *space and air* **for** seed germination 发芽 and root development 发育.

The plow 犁 **digs (v.) up** 挖掘, 发掘 the earth /and the harrow 耙 smooths (v.)使平整 the soil /and breaks up 打碎 any clumps 土块.

In the case that the soil is not **as compacted** 压实的 **as** to need a plow, it can also be tilled (v.)耕作, 犁地 by less deeply disturbing tools, before drilling 播种.

The least interruption 干扰 of soil structure 结构 and soil fauna 土壤动物 happens when a type of drilling machine is used which is outfitted 配备 to be able to "direct drill" 直接播种; "direct" referring to sowing 播种 into narrow 狭窄的 rows opened by single teeth placed in front of every seed-dispensing tube 排种管, directly into/between the partly composted 堆肥化的 remains (stubble 茬) of the last crop (directly into an untilled 未耕种的 field).

使用"传统播种机"之前, 必须先将硬地犁耙, 使其足够松软, 以便将种子播种到合适的深度, 并形成良好的"苗床", 为种子发芽和根系发育提供适宜的水分、稳定性、空间和空气。犁负责翻耕, 耙负责平整土壤, 并打散任何土块。如果土壤没有压实到需要犁耕, 也可以在播种前, 使用翻耕深度较小的工具, 进行耕作。使用配备"直接播种"功能的播种机, 可以最大限度地减少对土壤结构和土壤动物的干扰; "直接播种"是指将种子播种到狭窄的行距中, 这些行距由每个播种管前方的单齿打开, 直接播种到上一茬作物部分堆肥的残茬(茬)之间(直接播种到未耕种的田地中)。

A seed drill can be pulled across the field, depending on the type, using *draft* (动物) 驮重物的, 负重的 *animals* 役畜, The use of a seed drill also facilitates (v.)促进;使更容易, 使便利; 促进, 推动 weed control 杂草控制. Broadcast seeding results in a random 随机的 array 分布 of growing crops, making it difficult to control weeds using any method other than hand weeding 手工除草. A field planted using a seed drill is much more uniform 整齐的, typically in rows, allowing weeding with a hoe 锄头 during the growing season. Weeding by hand is laborious 费力的 and inefficient 低效的. Poor weeding reduces crop yield, so this benefit is extremely significant 重要的., like bullocks 公牛 or by a power engine 动力发动机, usually a tractor 拖拉机. Seeds sown using a seed drill are distributed 分布 evenly 均匀地 and placed at the correct depth in the soil.

根据播种机的类型, 播种机可以用耕畜(例如公牛)或动力发动机(通常是拖拉机)牵引穿过田地。用"播种机"播下的种子, 会被均匀地播撒在土壤中, 并放置在合适的深度。

Example 8. 案例
draft animal

役畜（拉重物的牲畜）。拉力动物：一种强壮的工作动物，用于拉载重车、犁地等工作，与骑乘动物相对。

In older methods of planting, a field is initially 最初 prepared with a plow to a series of linear 线性的 cuts known as furrows 犁沟. The field is then seeded by throwing the seeds over the field, a method known as manual 手工的 broadcasting 撒播. The seeds may not be sown to the right depth nor the proper distance 距离 from one another. Seeds that land in the furrows have better protection from the elements 自然环境, and natural erosion 侵蚀 or manual raking 耙地 will cover them while leaving some exposed 暴露的. The result is a field planted roughly 大致地 in rows, but having a large number of plants outside the furrow lanes 犁沟垄.

在较古老的种植方法中，首先用犁将田地犁出一系列线性切口，这些切口被称为“犁沟”。然后，通过将种子撒播到田地上来播种，这种方法称为人工撒播。种子可能播种深度不正确，彼此之间的距离也不正确。落在“犁沟”中的种子，可以更好地抵御风雨，自然侵蚀或人工耙地会覆盖它们，但也会有一些种子暴露在外。结果是田地里种植的作物行列混乱，但犁沟外却有大量植物。

There are several downsides 缺点 to this approach. The most obvious is that seeds that land outside the furrows will not have the growth shown by the plants sown in the furrow since they are too shallow 浅的 in the soil. Because of this, they are lost to the elements. Many of the seeds remain on the surface where they are vulnerable 易受伤害的 to being eaten by birds or carried away by the wind. Surface seeds commonly never germinate at all or germinate prematurely 过早地, only to be killed by frost 霜冻.

这种方法有几个缺点。最明显的缺点是，落在沟外的种子由于土壤太浅，无法像沟里播种的植物那样生长。因此，它们会被风吹走。许多种子留在地表，很容易被鸟啄食或被风吹走。地表种子通常根本不会发芽，或者过早发芽，最终被霜冻冻死。

Since the furrows represent only a portion 部分 of the field's area, and broadcasting distributes seeds fairly evenly, this results in considerable 相当大的 wastage 浪费 of seeds. Less obvious are the effects of over seeding 过度播种; all crops grow best at a certain density 密度, which varies depending on the soil and weather conditions. Additional seeding above this will reduce crop yields 产量, in spite of 尽管 more plants being sown, as there will be competition 竞争 among the plants for the minerals 矿物质, water, and the soil available. Another reason is that the mineral resources of the soil will also deplete 消耗 at a much faster rate, thereby 因此 directly affecting the growth of the plants.

由于犁沟仅占田地面积的一小部分，而撒播方式种子分布较为均匀，因此会造成大量的种子浪费。过度播种的影响则不那么明显；所有的作物，在一定密度下生长最佳，而该密度会因土壤和气候条件而异。超过此密度的额外播种，会降低作物产量，尽管播种的作物更多，因为作物之间会竞争矿物质、水分和可用的土壤。另一个原因是，土壤中的矿物质资源，也会以更快的速度消耗，从而直接影响植物的生长。

Recent improvements to drills allow seed-drilling without prior 先前的 tilling 耕作. This means that soils subject to 易遭受 erosion or moisture loss are protected until the seed germinates and grows enough to keep the soil in place. This also helps prevent soil loss by avoiding erosion after tilling. The development of the press drill 镇压式条播机 was one of the major innovations 创新 in pre-1900 farming technology.

近期对"播种机"的改进, 使得无需耕作, 即可播种。这意味着易受侵蚀或水分流失的土壤, 能够得到保护, 直到种子发芽并长到足以固定土壤的位置。这也有助于避免耕作后土壤侵蚀, 从而防止土壤流失。压播机的发明是 1900 年以前农业技术的重大创新之一。

The invention of the seed drill dramatically 显著地 improved germination. The seed drill employed 采用 a series of runners 滑刀 spaced 间隔 at the same distance as the plowed furrows. These runners, or drills, opened the furrow to a uniform 均匀的 depth before the seed was dropped. Behind the drills were a series of presses, metal discs 圆盘 which cut down the sides of the trench 沟渠 into which the seeds had been planted, covering them over.

播种机的发明, 极大地提高了"发芽率"。播种机采用了一系列与犁沟间距相同的匍匐式犁铧。这些匍匐式犁铧, 或称条播机, 在播种前将沟深均匀地开沟。条播机后面是一系列压实器, 这些金属圆盘可以切割播种沟的两侧, 并将其覆盖。

This innovation permitted 允许 farmers to have precise 精确的 control over the depth at which seeds were planted. This greater measure of control meant that fewer seeds germinated early or late and that seeds were able to take optimum 最佳的 advantage of available soil moisture in a prepared seedbed. The result was that farmers were able to use less seed and at the same time experience larger yields than under the broadcast methods.

这项创新, 使农民能够精确控制播种深度。更高的控制程度, 意味着更少的种子"早发芽"或"晚发芽", 并且种子能够充分利用准备好的苗床中可用的土壤水分。结果是, 农民能够减少种子用量, 同时获得比撒播更高的产量。

The seed drill allows farmers to sow seeds in well-spaced 间隔适当的 rows at specific depths at a specific seed rate 播种量; each tube creates a hole of a specific depth, drops in one or more seeds, and covers it over. This invention gives farmers much greater control over the depth that the seed is planted and the ability to cover the seeds without back-tracking 折返. The result is an increased rate of germination, and a much-improved crop yield (up to eight times compared to broadcast seeding 撒播).

播种机使农民能够以特定的播种量, 在特定深度、行距, 均匀地播种; 每根播种管会形成一个特定深度的孔, 放入一粒或多粒种子, 然后覆盖。这项发明使农民能够更好地控制播种深度, 并能够在不回溯的情况下覆盖种子。其结果是提高了发芽率, 并显著提高了作物产量 (与撒播相比, 产量最高可提高八倍)。

The use of a seed drill also facilitates 促进 weed control 杂草控制. Broadcast seeding results in a random 随机的 array 分布 of growing crops, making it difficult to control weeds using any method other than hand weeding 手工除草. A field planted using a seed drill is much

more uniform 整齐的, typically in rows, allowing weeding with a hoe 锄头 during the growing season. Weeding by hand is laborious 费力的 and inefficient 低效的. Poor weeding reduces crop yield, so this benefit is extremely significant 重要的.

使用播种机也有利于杂草控制。撒播会导致作物生长杂乱, 除了手工除草外, 很难用其他任何方法控制杂草。使用播种机播种的田地更加均匀, 通常成排, 生长季节可以用锄头除草。手工除草既费力又低效。除草不当会降低作物产量, 因此播种机的优势非常显著。

3. 中文释义

在17世纪末, 一场大规模的农业革命发生了, 这场革命被称为"农业革命"。所以这个视频就是关于这场革命是如何发生的, 以及它是如何改变欧洲的经济基础的。所以, 如果你准备好像杰思罗·塔尔 (Jethro Tull) 那样充实自己的知识, 那我们开始吧。

在这一时期之前, 欧洲大约80%的人靠农业为生和死亡。英国和荷兰共和国是例外情况 (我们马上会讲到)。并且, 虽然我们在其他地方谈到的农业技术, 比如两田制和三田制, 能够养活很多人, **但在大多数情况下, 农作物的产量仅够维持生计, 绝对称不上富足。此外, 大约每8到10年, 一些极端的气候事件会导致大部分地区农作物歉收, 许多人挨饿, 其中不少人还会死亡。**

但在18世纪初, 英国和荷兰共和国的农业, 开始发生转变, 他们开创的农业方法, 最终会传播到欧洲其他地区。但令人惊讶的是, 在这些地方, 只有大约一半的人口从事农业生产, 然而他们农场的产量, 却增长到了原来的三倍。如果你想知道他们是怎么做到的, 我这就告诉你。

首先, 他们放弃了"三田制"。尽管三田制带来了一些好处, 但它仍然要求每年有三分之一的土地休耕。原因是农民一直面临着土壤肥力耗尽的威胁, 这意味着为了种植粮食, 土壤会将养分供给植物, 如果你在同一块土地上种植足够多的作物, 最终所有的养分都会流失。但现在英国人和荷兰人发现, **如果他们将从土壤中吸取养分的谷物作物, 与像土豆和三叶草这样能恢复土壤养分的其他作物, 交替种植, 那么他们的田地, 就可以在没有"每年休耕期"的情况下, 生产作物。**三叶草尤其重要, 因为它能将氮元素重新补充到土壤中, 而氮元素可能是最重要的养分之一。谁会在意呢? 重点是什么呢? 重点是, 我亲爱的对话者, **随着这种农业创新, 粮食产量大幅提高, 这也导致了人口的增加, 而这一点在之后会变得非常重要。**所以记住这一点, 我们稍后还会提到。

除了新的种植方式, 新的农业技术也有助于提高作物产量。例如, 杰思罗·塔尔的"条播机"和"机械锄头"。**"条播机"能确保种子以精确的间隔种植, 然后用泥土覆盖种子, 而"机械锄头"能够提高从土壤中清除杂草的效率。**等等, 还有更多。还记得上一时期的"哥伦布大交换" (Columbian Exchange) 吗? 那是欧洲对美洲探索的结果, 其中一项重要的交换物品就是食物。**许多不同种类的豆类, 因此进入了欧洲。**也许从美洲转移过来的最重要的作物是土豆。**起初, 欧洲人觉得土豆配不上自己。他们认为土豆是给牲畜吃的好食物, 而不适合摆上他们的餐桌。但随着时间的推移, 土豆成为了农民的主食, 它极大地改善了农民的生活, 因为土豆富含营养, 一小片土豆地的产出就能让一个家庭吃得丰盛。**

所以所有这些合起来就是我们所说的农业革命, 它既增加了欧洲的粮食供应量, 也有助于提高人口的寿命。**现在, 人口的爆炸式增长, 加上从事农业所需的人数减少, 这意味着很多人没有足够的工作可做, 而这一现实促成了这一时期另一个重大的经济变化, 也就是家庭手工业的迅速扩张。**

现在你可能知道“cottage”（小屋）是什么意思，也可能知道“industry”（产业）意味着什么，那么把它们放在一起，你得到了什么呢？**在你的小屋里生产用于销售的商品，这就是“家庭手工业”（cottage industry）。**由于从事农业的人越来越少，农村家庭需要通“过家庭手工业”来补充收入。**“家庭手工业”是按照“外放制”（类似外包制）（putting-out system）组织起来的，这意味着：商业资本家会向农村工人提供原材料，然后农村工人将这些原材料加工成成品。商人会支付工人工资，然后将成品拿到市场上销售。这种安排为“工业革命”的“工厂制度”奠定了基础，**但我们会在另一个视频中讲到这一点。

现在农村的“家庭手工业”引起了很大的轰动，这在很大程度上是因为**它开始与城市的“行会工人”竞争。如果你是一名工匠，想要靠工作获得报酬，你就必须成为“行会成员”，如果你是成员，你的工资会有有一定的声望和保障。如果你不是成员（通常非成员包括女性、移民和犹太人），那么你就只能在社会边缘艰难谋生。但有了“外放制”，那些以前被边缘化的人可以工作，尽管工资相当低，而且无需加入行会（即低成本取代高成本。相当于如今的国际产业链，向劳动力成本低的地方转移了）。**所以，劳动力和贸易，越来越多地摆脱了政府和企业实体施加的传统限制，这是一个重要的方面。

这种市场经济的增长，导致对“制成品”的需求不断增加，这意味着人们推动将制造业从“家庭”转移到被称为“工厂”的新建筑中（相当于专业化了，产业升级了）。这种转变在英国表现得最为明显。英国的羊毛产业无人能及。“外放制”使许多工人能够在自己的行业中“专业化”。有些人养羊，有些人加工羊毛，还有些人织布，另外一些人负责染色。随着欧洲人对羊毛的需求越来越多，英国增加了羊毛的产量，这使得更多的人有工作可做，并且能挣到可观的工资。现在商人直接向工人支付工资，这导致了“货币经济”的增长（以防你不明白，货币经济是指以货币为运行基础的经济），而不断增长的货币经济，与不断发展的“市场经济”携手合作，在欧洲引发了巨大的经济变革。

现在，市场经济是一种生产和价格，严格由私营企业之间的竞争决定的经济模式。记住，在这一时期之后，重商主义（mercantilism）是欧洲的主导经济体系。这个体系是由“国家”驱动的，所以是国家设定价格，并决定生产计划（相当于中国的“计划经济”）。但在1776年，**亚当·斯密（Adam Smith）**出版了《国富论》（The Wealth of Nations），在这本书中，**他批评了重商主义，并主张建立一个不受监管的市场，这个市场将由“供求关系”来调节。**需要明确的是，“重商主义”的结束和“市场经济”的开始，并没有一条明确的界限，但在这个时期，我们正处于这个模糊的过渡阶段。

无论如何，市场经济的增长，导致了新的“金融实践”和“机构”的出现，我要告诉你其中的两个。

- 首先是“保险业”的引入。如果发生像火灾摧毁工厂这样的灾难性事件，保险公司会收取每月的保费，并弥补企业家的损失。**有了这种保障，企业家，尤其是英国的企业家，有信心将大量资金投入工厂和不断增加的待售商品库存中。**
- 其次是“银行和风险资本”的兴起。在1750年之前，如果你是一名企业家，想要建造一个工厂，例如，你必须向家人借钱或者自己拥有财富。但随着商业的蓬勃发展和工厂制度的兴起，专业银行出现了，它们只保留人们存入的一部分钱，然后将其余的钱作为“风险资本”贷出，并收取利息。

所以随着市场经济的发展，欧洲为其在全球（经济与政治势力方面）不断扩大的角色，奠定了基础，关于这一点，我们会在另一个视频中详细讲述。好的，我的第三单元的其他视频就在这里，所以伸出你的手指点击吧。另外，如果你想在课堂上得A，在考试中得5分，那就获取我为这些视频准备的笔记指南吧。感谢你的关注，我们下次再见。我是劳伦特，下线了。

4. pure

At the end of the 17th century, a massive revolution in farming occurred and is known as the Agricultural Revolution. So this video is all about how that happened and how it shifted the economic foundations of Europe. So if you're ready to get them brain cows milked Jethro Tull's style, then let's get to it.

Prior to this period, about 80 percent of the people in Europe lived and died by farming. England and the Dutch Republic being accepted—and we'll get to that in a minute—and while the farming techniques we've talked about elsewhere, like the two field system and the three field systems, were able to feed a lot of people, for the most part crops yielded only enough to survive and certainly not an abundance. Additionally, about every eight to ten years, some insane climate event caused crop failures in large portions of people went hungry, and many of them died.

But by the turn of the 18th century, farming in Britain and the Dutch Republic began to shift, and the methods that they pioneered would eventually spread to the rest of Europe. But what's crazy is that in those places, only about half the population was devoted to farming, and yet the output of their farms tripled. If you want to know how they did it, I'm about to tell you.

First of all, they abandoned the three field system. For all the benefits it brought, it still required a third of the land to lie fallow each year. The reason is because the constant threat to farmers was soil exhaustion, meaning that in order to grow food, the soil gave up its nutrients to the plants, and if you plant enough crops in the same soil, all the nutrients will eventually be gone. But now what the English and Dutch discovered is that if they alternated grain crops, which leached nutrients from the soil, with other crops which restored nutrients to the soil like potatoes and clover, then their fields could produce crops with no yearly fallow period. And clover was especially important because it put nitrogen back in the soil, which was perhaps one of the most important nutrients. Who cares? What's the point? The point is, my dear interlocutor, is that with this innovation in farming, the food output rose significantly, which also led to a population increase, and that's going to become significant later. So put that in your pocket, and we'll come back to it later.

Now along with new ways of planting, new technologies for farming also helped increase crop yield. For example, Jethro Tull's seed drill and mechanical hoe. The seed drill made sure that the seeds were planted at exact intervals and then covered them with dirt, while the mechanical hoe was able to increase efficiency with which the weeds were removed from the soil. But wait, there's more. Remember the Columbian Exchange from the last period? That was the result of European exploration in the Americas, and one of the big items being exchanged was food. Many different kinds of beans came into Europe as a result of it. Maybe the most significant American crop to be transferred was the potato. Originally, Europeans felt like they were too good for potatoes. Like they reckoned it was

good food for livestock but not for their table. But in time, the potato became a staple of the peasantry, and it significantly improved their lives because it was packed with nutrition, and a small crop could feed a family heartily.

So all of this taken together is what we call the Agricultural Revolution, and it both increased the amount of food available in Europe and contributed to longer life spans among the population. Now this population explosion, combined with the fewer people needed for farming, meant that a lot of people didn't have enough work, and that reality contributed to another significant economic change during this period, namely the rapid expansion of the cottage industry.

Now you probably know what a cottage is—it's a little house—and you probably know what industry means—it means making goods for sale. So put them together, and what do you get? Making goods for sale in your little house, and that is the cottage industry. With fewer and fewer people needed for farming, rural households needed to supplement their earnings with the cottage industry. Now the cottage industry was organized according to the putting-out system, and here's what that means: Merchant capitalists would provide raw materials to rural workers, who would then manufacture those materials into finished goods. Merchant would pay the worker and then go sell the finished goods on the market. This arrangement laid the groundwork for the Industrial Revolution's factory system, but we'll get to that in another video.

Now the cottage industry in rural areas was creating a significant stir, not least because it began competing with urban guild workers in the cities. If you were an artisan and wanted to get paid for your work, you had to be a guild member, and if you were a member, you had a certain amount of prestige and protection for your wage. And if you were not a member—in typical non-members included women and immigrants and Jews—then you had to scratch out a living on the margins of society. But with the putting-out system, those folks who were previously consigned to the margins could work, albeit for pretty low wages, apart from membership in a guild. So that was a significant way in which labor and trade were increasingly freed from traditional restrictions imposed by governments and corporate entities.

The growth of this kind of market economy led to an increasing demand for manufactured goods, which meant there was a push to get manufacturing out of people's homes and into these new buildings called factories. And nowhere was this shift more pronounced than in England. The British wool industry was second to none. The putting-out system enabled many workers to specialize in their trade. Some raised sheep, others processed wool, and still others wove fabric, and then still others dyed. And as Europeans began demanding more and more wool, Britain increased its production, which led to more people working and earning decent wages to boot. Now the merchants paid the workers directly, and that led to a growing money economy—which, in case you couldn't discern, is an economy that runs on money—and the growing money economy worked hand in hand with the growing market economy to create a seismic economic shift in Europe.

Now market economy is one in which production and prices are determined strictly by competition between privately owned businesses. Remember that after this period, mercantilism was the dominant economic system of Europe. This system was driven by the state, so it was the state who set prices and determined production schedules. But in 1776, Adam Smith published the book *The Wealth of Nations*, in which he critiqued mercantilism and argued for an unregulated market which would be governed by the forces of supply and demand. To be clear, there is not a hard line where mercantilism stopped and market economies started, but in this period we're in that muddy transition phase.

Regardless, the growth of the market economy led to new financial practices and institutions, and I'm going to tell you about two. First was the introduction of insurance. For monthly premium, insurance companies would recoup an entrepreneur's losses if something catastrophic happened, like a fire destroying a factory. With this kind of security, entrepreneurs, especially in England, gained the confidence to invest metric but loads of money into the factories and growing inventories of goods for sale. Second was the rise of banks and venture capital. Prior to 1750, if you were an entrepreneur and wanted to build a factory, for example, they would have to borrow money from family or have a fortune of their own. But with this explosion of commerce and the rise of the factory system, specialty banks arose which kept only some of the money people deposited and then loaned the rest out as venture capital to be paid back with interest.

And so with this development of the market economy, Europe had laid a foundation for its expanding global role, of which more in another video. Okay, right here the rest of my unit 3 videos, so get that clicky finger out and click. Additionally, if you need help getting an A in your class and a five on your exam, then grab my note guides for these videos right here. Thanks for coming along, I'll catch you on the flip-flop. I'm Laurent out.
