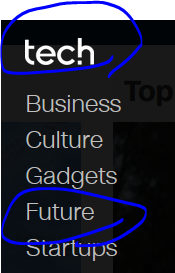
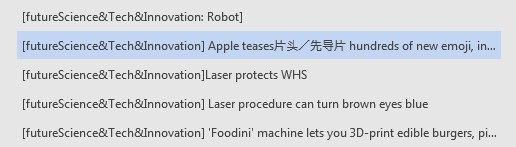
# Unit1) Science and technology (e.g. AI, robots)

# Stop) CNN related news about science and tech

CNN <http://money.cnn.com/technology/future/> 

<http://money.cnn.com/technology/future/?iid=tech_future_nav>

Copy the following from **CNN.doc**



# So Good [futureScience&Tech&Innovation:3D printing edible food]

<http://edition.cnn.com/2014/11/06/tech/innovation/foodini-machine-print-food/index.html>

[想咖啡街那个 3D-printer to print a pancake]

As further proof that you can now 3D-print anything, a company called [Natural Machines](http://www.naturalmachines.com/) has introduced a 3D printer for food. The "Foodie," as it's called, isn't too different from a regular 3D printer, but instead of printing with plastics, it deploys **edible['edibl] ingredients** that are squeezed out of **stainless steel** capsules: "It's the same technology," says the co-founder of Natural Machines, "but with plastics there's just one **melting point**, **whereas相比之下** with food it has different temperatures, **consistencies稠度，相容性** and **textures(口感；质地；纹理).** Also, gravity works a little bit against us, as food doesn't hold the shape as well as plastic."

The Barelona-based **startup** behind the machine says it's the only one of its kind capable of printing a wide range of dishes, from sweet to **savory['seivəri]adj. 可口味美的；n. 开胃菜**

Lynette Kucsma, co-founder of Natural Machines said"**In essence**, this is a mini food manufacturing plant **shrunk down** to the size of an oven," pointing out that at least in the initial stage the printer will be targeted mostly at professional kitchen users, with a consumer version to follow, at a projected retail price of around $1,000.

**In principle,** the Foodie sounds like the ultimate laziness aid: press a button to print your ravioli. But Natural Machines is quick to point out that it's designed to take care only of the difficult and time-consuming parts of food preparation that discourage people from cooking at home, and that it promotes healthy eating by requiring fresh ingredients prepared before printing.

**Nevertheless但是呢，尽管如此,** the company is working with major food manufacturers to create pre-packaged plastic **capsules** that can just be loaded into the machine to make food, **even though** they **assure** these will be **free of preservatives不能保存, with a shelf life limited to five days.**

The printing process is slow, but faster than regular 3D printing. Other than being capable of creating complex designs, such as very detailed cake decorations or food arranged in unusual shapes, the Foodini can be useful for recipes that require precision and **dexterity[dek'sterəti] 灵巧；敏捷机敏/ agility [ə'dʒiləti],** like homemade pizza or filled pasta.

|  |  |
| --- | --- |
| acumen | Quickness, accuracy, and agility of judgment or insight. 敏锐，聪明：判断或洞察力的快速，准确及敏捷; eg The IBM Deeper Insight program is designed to help you improve your **business acumen.商务判断或洞察力 //dexterity[dek'sterəti] 灵巧；敏捷机敏/ agility [ə'dʒiləti]** |
| 灵巧；敏捷机敏 | dexterity[dek'sterəti] 灵巧；敏捷机敏/ agility [ə'dʒiləti] |

Currently, the device only prints the food, which must be then cooked as usual. But **a future model** (future tech and science) will also cook the preparation and produce it ready to eat. The idea also comes with a social element too. "There's a touchscreen on the front that connects to a recipe site in the cloud, so it's an internet-of-things, connected kitchen appliance." Users will also be able to control the device remotely using a smartphone, and share their recipes with the community.

That is, if people don't **balk at/turn down** the idea of eating printed food. "We have done tests and everybody liked the food. Take the microwave oven, for example: in the 70s, people were a bit fearful about it, they thought food could be poisoned with radiation or something, but fast forward 30 years, and there's one in every household. This is real food, with real fresh ingredients, it's just prepared using a new technology."

|  |  |
| --- | --- |
| balk | To put **obstacles, obstructionss, or barricades** in the way of, to set sb feel **frustrated;** 阻碍，阻挠, 阻碍或使受挫; hinder, eg The horse balked at the jump. 这匹马突然停下来不前进 |
| balk at sth: to refuse sth stubbornly or abruptly: 固执地或突然地拒绝： eg 她固执地拒绝妥协的想法 she balked at the very idea of any compromise. eg The U.S. counterparts said that during the APEC summit, the CHINA leaders is still balking at the U.S. proposal about bileral joint conference联合会议 between U.S and CHINA counterparts.　　　　／／a joint statement一份联合声明 |

The company is completing **a round of financing一轮融资** and plans to begin mass manufacturing in the second half of 2015.

# [Google AI center in SH]

<http://www.bbc.com/news/business-42334583>

Google is deepening its push into artificial intelligence (AI) by opening a research centre in China, even though its search services remain blocked in the country, with sort of **a blanket ban**. Google said the facility would be the first its kind in Asia and would aim to employ local talent.

Silicon Valley is focusing heavily on the future applications for AI. China has also indicated strong support for AI development and for **catching up with** the US.

Research into artificial intelligence has the potential to improve a range of technologies, from self-driving cars and automated factories to translation products and facial recognition software.

* [What is artificial intelligence?](http://www.bbc.co.uk/news/av/technology-34224406/what-is-artificial-intelligence)
* [Hiding from China's all-seeing state](http://www.bbc.co.uk/news/av/world-asia-china-42248056/in-your-face-china-s-all-seeing-state)
* [Artificial intelligence: **Hype炒作**, hope and fear](http://www.bbc.co.uk/news/technology-41634316)

[In a blog post on the company's website,](https://www.blog.google/topics/google-asia/google-ai-china-center/) Google said the new research centre was an important part of its mission as an "AI first company". "Whether a breakthrough occurs in Silicon Valley, Beijing or anywhere else, [AI] has the potential to make everyone's life better for the entire world," said Fei-Fei Li, chief scientist at Google Cloud AI and Machine Learning.

Strict rules

The tech giant operates two offices in China, with roughly half of its 600 employees working on global products, company spokesperson Taj Meadows told the AFP news agency. But Google's search engine and a number of other services are banned**(blanket ban)** in China. The country has **imposed increasingly strict rules on** foreign companies over the past year, including [new **censorship** restrictions.](http://www.bbc.co.uk/news/business-40651951)

China has for many years **censored content** it sees as politically sensitive, using an increasingly **sophisticated高精密的** set of filters that **critics批评家** have called the "great firewall".

At the same time, China has been expanding its push into artificial intelligence. Last week, the country's President, Xi Jinping, urged senior officials at a key Communist Party meeting to "accelerate implementation of big data". In July, [China announced its national plan for AI](http://www.bbc.co.uk/news/technology-42153692), calling for the country to catch up with the US.

**Drawback and downside:**

But its advances in this area have **sparked the international concerns**. Human rights groups are among those troubled by China's use of artificial intelligence to monitor its own citizens. Addressing the meeting of Communist Party officials late last week, President Xi reportedly emphasised "the necessity of using big data to improve governance".

# [futureScience&Tech&Innovation: Robot]

<http://edition.cnn.com/2015/05/06/tech/mci-bionic-insects/index.html>

From the organizational strength of the **ant colony(1.蚁群 2.团队协作))** to the unseen communication in **a swarm/a flock of** butterflies, nature has always beaten man to it. But now researchers are taking their cue from the natural world to gain valuable insights that could one day transform industry.

* Learning from **ant colony(1.蚁群 2.团队协作))**

Its latest project – **Bionic**ANTs**([baɪ'ɑnɪk]仿生学的),BionicButterfly,BionicLizard,** all **mimic** nature to find solutions to the problems thrown up by the coordination and logistics necessary to carry out mechanical robotic tasks.

"With all of our products we want to show how innovative technical ideas can facilitate the future of work and how principles from nature can change and improve industries".

Its prototype artificial BionicANTs**([baɪ'ɑnɪk]仿生学的)**, meanwhile, takes its cue from the deeply hierarchical and highly organized world of the **ant colony(1.蚁群 2.团队协作)."** **//bionic product**

Our **ants** are able to communicate with a network on their own. Working together they can achieve things they could not do by themselves," he said. "This **cooperative** behavior provides interesting approaches for the factory of tomorrow." With greater flexibility and individuality demanded of automation in the future, the ants, he said, show how a networked group can communicate with each other while at the same time take orders at a higher control level.

"Using these types of networks will allow industries to better **cater to 迎合；为…服务** the individual requests of customers."

* Learning from **bufferfly**

The aim of its **BionicButterfly([baɪ'ɑnɪk]仿生学的)** project, for instance, shows how communication **in flight** could one day work for complex networks in the workspace.The components have to be able to manage their own actions while knowing what the other members of their network are doing. "We wanted to show how several objects could be coordinated without colliding in a three- dimensional space **thanks t**o a **multifaceted** network," he said.

"Although we don't expect our butterflies to be flying through factories any time soon, their integrated network systems may well be used as solutions for industrial logistics applications or could lead to a guidance and monitoring system in future factories."

Core of the research:

At the core of the research is **swarm technology**; the study of how large groups/**swarms** such as swarms of bees, swarms of ants and butterflies can act in concert as a group but at the same time maintain enough individual volition to avoid collision.

"**Swarm technology** has improved in a huge way in recent years," said. "Our butterflies get their instructions from a master computer in much the same way as an air traffic controller operates at an airport, coordinating all the different flying **maneuvers** each butterfly performs.

"This automated controller checks the position of all the butterflies and makes sure there will be no collision. A human pilot is not required.". The ants, on the hand, communicate with each other and come to an agreement about what to do next.

"Even though the ants are part of an overall networked system, every ant is an individual unit which can react independently to a situation," he said. **"Swarm technology** has a huge significance for the future of mechanization and is improving very fast."

* Learning from **lizards蜥蜴**

The chameleon-tongue robot -- a liquid-filled rubber **gripping (grasp, hold by hands tightly)** device which **mimics** the **grasping** (holding by hands) abilities of the **predatory食肉动物** lizard -- could be used to handle small objects, replacing the finesse of human motor abilities in the workplace.

"The tongue has the ability to grab differently-shaped objects and it can also grab more than one thing at once," he said. "It could be used, for instance, in lightening the load of small but time-consuming jobs on the factory floor, esp. for the **arduous and menial work (费力的，向仆人一样的工作),** like the **assembly-line work** that is, or even to clean up a room by taking things back to their usual places."

He said the importance of these prototypes shows the direction of industrial automation -- that robots must not only take their orders from a central computer but show the capacity for individual action as well.

"The components have to be able to manage their own actions while knowing what the other members of their network are doing," he said.**"Bionic baɪ'ɑnɪk] 仿生学的；利用仿生学的products** are leading to new ideas about how industrial processes could work. At the moment the development is furious and the changes are fundamental.

# [futureScience&Tech&Innovation] Apple teases片头／先导片 hundreds of new emoji, including gender neutral options

<http://money.cnn.com/2017/10/06/technology/apple-new-emoji/index.html>

The tech giant announced on Friday that next week's iOS update will include more expressive **smiley ['smaɪli] faces**, gender-neutral options, mythical creatures, clothing, food and animals. **//simile 明喻 V.S. metaphor**

|  |
| --- |
| smiley /ˈsmaɪlɪ/  1.ADJ A smiley person smiles a lot or is smiling. 总带着笑脸的; 笑着的  例：  Two smiley babies are waiting for their lunch.  两个笑着的婴儿在等着午餐。  2.N-COUNT A smiley or a smiley face is a symbol used in e-mail to show how someone is feeling. :-) is a smiley showing happiness. (电子邮件中表示开心的) 笑脸符号:-)  hedgehog /ˈhɛdʒˌhɒɡ/  A hedgehog is a small brown animal with sharp spikes covering its back. 刺猬 |

Google previewed more than two dozen emoji that **fit into** these categories, including a **hedgehog***刺猬***,** a carton of Chinese takeout, a **giraffe [dʒɪˈrɑ:f] 长颈鹿**, fairy, dinosaur,broccoli, **sled/sledge雪橇**, a scarf and vampire. There's also a hand signing "I love you" and an angry emoji face with explicit characters blocking the mouth. The update will also include the emoji [announced](http://money.cnn.com/2017/07/17/technology/apple-emoji-2017/index.html?iid=EL) on World Emoji Day earlier this year, such as **a breastfeeding mom** and a woman in a **headscarf/hijab(（穆斯林妇女戴的面纱或头巾）).**

Apple has **stepped up efforts to** include more diverse options, such as the new gender-neutral characters. It's also added more skin tones and country flags in recent updates. Apple isn't the only company trying to make emoji more **inclusive 更加的包容 (inclusiveness 包容；包容性).** Earlier this year, Facebook [released](http://money.cnn.com/2017/08/25/technology/facebook-family-emoji/index.html?iid=EL) **a slate of一系列** new family emoji with a range of skin tones and family makeups.

Android has also recently redesigned its emoji and added new options like a T-Rex, orange heart and vomiting face. Its previous emoji were criticized for looking like **blobs（ You can use blob to refer to something that you cannot see very clearly, for example because it is in the distance. 模糊不清的一团东西）.**

|  |
| --- |
| slate /sleɪt/  1. Slate is a dark grey rock that can be easily split into thin layers. Slate is often used for covering roofs. (常用来作屋顶建材的) 石板 e.g. ...a stone-built cottage, with a traditional slate roof. …一间有传统石板屋顶的石砌村舍。 2. N-COUNT A slate is one of the small flat pieces of slate that are used for covering roofs. 石板瓦 e.g. Thieves had stolen the slates from the roof. 窃贼偷走了屋顶的石板瓦。 3. V-T PASSIVE If something is slated to happen, it is planned to happen at a particular time or on a particular occasion. (在特定时间或者条件下) 选定 e.g. Bromfield **was slated to become** U.S. Secretary of Agriculture. 布罗姆菲尔德被内定为美国的农业部长。 4. V to cover (a roof) with slates 用石板瓦盖屋顶 5. V to criticize, slam, condem, **denounce,** **decry** harshly; censure 严厉批评; 谴责 6. ADJ of **the colour slate** 石板色; 深蓝灰色 |
| **[ start with a clean slate 不计前嫌重新开始; 既往不咎]**  If you start with **a clean slate,** you do not take account of previous mistakes or failures and make a fresh start. e.g. The proposal is to pay everything you owe, so that you can **start with a clean slate.** 奉劝你还清所有债务，这样你就可以重新开始 eg He was put in jail for 2 years, so without **a clean slate 清白的(身家)历史**. |
| **[ a slate of sth 一系列 ]**  E.g. Earlier this year, Facebook (FB, Tech30) released a slate of new family emoji with a range of skin tones and family makeups. e.g. Google previewed more than two dozen emoji that fit into these categories, including a **hedgehog刺猬,** a carton of Chinese takeout, a **giraffe [dʒɪˈrɑ:f] 长颈鹿**, fairy, dinosaur, broccoli, **sled/sledge雪橇,** a scarf and vampire. There's also a hand signing "I love you" and an angry emoji face with explicit characters blocking the mouth. The update will also include the emoji announced on World Emoji Day earlier this year, such as **a breastfeeding mom** and a woman in a **headscarf/hijab(（穆斯林妇女戴的面纱或头巾）).** Apple has **stepped up efforts to** include more diverse options, such as the new gender-neutral characters. It's also added more skin tones and country flags in recent updates. Apple isn't the only company trying to make emoji more **inclusive 更加的包容 (inclusiveness 包容；包容性)**. Earlier this year, Facebook released **a slate of一系列** new family emoji with a range of skin tones and family makeups. Android has also recently redesigned its emoji and added new options like a T-Rex, orange heart and vomiting face. Its previous emoji were criticized for looking like **blobs（ You can use blob to refer to something that you cannot see very clearly, for example because it is in the distance. 模糊不清的一团东西） // a crop of new students 一批新学生; a crop of veterans 一批退伍军人** |

# [futureScience&Tech&Innovation] Destop PC

You will see plenty of smartphones in **the developing world** and you'll see plenty of TVs; but you're unlikely to see desktop computers in remote areas.

Poor internet connectivity, uncertain power supply and a simple lack of money have meant that billions have been locked out of the knowledge economy.

Matt Dalio, CEO of Endless Computers, wants to change all of that with the first simplified, robust and affordable desktop aimed at **emerging market** consumers.

Dalio told CNN he got the idea to create a $169 computer while he was traveling and noticed that, while most homes did not have a desktop computer, they often had an HD screen.

**epiphany /ɪˈpɪfənɪ/**

**1.N-COUNT An epiphany is a moment of sudden insight or understanding. 顿悟 e.g.**

**...Isaac Newton's epiphany about gravity and a falling apple. ...伊萨克·牛顿对苹果下落与地心引力的顿悟**

"It was one of those micro-**epiphanies**," he said. "I was in India and I looked over at a television and then I looked at my hand and there was a phone in it and I thought why not connect the two?

"While smartphones may be **sweeping through** **emerging markets**, a computer is still the thing that you and I sit down to every day to access the knowledge economy," he said. "The only difference between a smartphone and a computer is the monitor, the keyboard, the mouse and the operating system."

Despite the best efforts to bring affordable technology to the developing world, from [radios powered by clockwork](http://windupradio.com/trevor.htm) to [water pumps](http://www.unicef.org/sowc96/hpump.htm) with few moving part, designing new systems from scratch is like reinventing the wheel.

And like most designs for new wheels, they often end up being round.

"If I'd known then what I know now," Dalio said of the three-year journey to develop possibly the world's most pared back desktop.

"Initially I thought we're going to take Android, put it on a smartphone processor and how hard could it be?" he said. "And when we went into hardware how hard could that be? We're basically taking an off-the-shelf board and slapping two pieces of plastic around it.

"The real challenge we found was that no existing operating system worked."

Windows, he said, was too expensive and doesn't run on cheap processors, Android is **fundamentally** a mobile system, Chrome requires connectivity, and Linux is too hard to use.

"We realized we had to build an operating system, but ignorance is a powerful tool."

After searching for the right development team (Endless eventually came up with a Linux-based operating system equipped with a new and easier-to-use interface) and launching a Kickstarter campaign that raised more than its $100,000 target in record time, Endless plans to go on sale in Mexico in May.

**Equipped with** app-based software and hardware that can cope with an uncertain power supply, Endless comes in a 32G and 500GB version both powered by 2GB of RAM.

The idea is to effectively **encapsulate** the internet for consumers beyond the range of the net. Each unit comes pre-loaded with a full **encyclopedia**, recipes, educational lectures and health information.

"The single most popular application is Wikipedia," he said. "We are planning on adding software with a focus on farming; in many places people are cash poor but that doesn't mean they don't have assets.

"When a cow, for instance, gets sick it's a real problem. That cow's health can sometimes be more important than their own child's because the fortune of the whole family rests on that cow.

"Information is so powerful ... what we want to do is to fill this product with the information that's relevant to their lives," Dalio said. "No one in San Francisco is building a how-to-manage-your-cattle app, that's for sure."

With an estimated 5 billion people without access to computers, Endless say the potential for their computers is enormous and, while it may not be the cheapest on the market, Dalio says it is the best that money can buy.

Consumers in the developing world, he says, are no different to consumers anywhere else in the world and want something functional but also slick.

"People are like you and I, they want the best that they can afford," he said. "They want something unique and beautiful and exciting and different.

"People here in the West will say they want a flat top on their desktops so they can stack their books on top of it, it's just a commodity, but there it's an object of art, of luxury, of pride.

"They want the round top that we produce specifically so their kids can't stack their books on top of it."

# [futureScience&Tech&Innovation] 'Foodini' machine lets you 3D-print edible burgers, pizza, chocolate

<http://edition.cnn.com/2014/11/06/tech/innovation/foodini-machine-print-food/index.html>

As further proof that you can now 3D-print anything, a company called [Natural Machines](http://www.naturalmachines.com/) has introduced a 3D printer for food.

The "Foodini," as it's called, isn't too different from a regular 3D printer, but instead of printing with plastics, it deploys edible ingredients squeezed out of stainless steel capsules: "It's the same technology," says Lynette Kucsma, co-founder of Natural Machines, "but with plastics there's just one melting point, whereas with food it's different temperatures, consistencies and textures. Also, gravity works a little bit against us, as food doesn't hold the shape as well as plastic."

The Barcelona-based startup behind the machine says it's the only one of its kind capable of printing a wide range of dishes, from sweet to savory.

In essence, this is a mini food manufacturing plant shrunk down to the size of an oven.

Lynette Kucsma, co-founder of Natural Machines

"In essence, this is a mini food manufacturing plant shrunk down to the size of an oven," Kucsma said, pointing out that at least in the initial stage the printer will be targeted mostly at professional kitchen users, with a consumer version to follow, at a projected retail price of around $1,000.

In principle, the Foodini sounds like the ultimate laziness aid: press a button to print your ravioli. But Natural Machines is quick to point out that it's designed to take care only of the difficult and time-consuming parts of food preparation that discourage people from cooking at home, and that it promotes healthy eating by requiring fresh ingredients prepared before printing.

Nevertheless, the company is working with major food manufacturers to create pre-packaged plastic capsules that can just be loaded into the machine to make food, even though they assure these will be free of preservatives, with a shelf life limited to five days.

The printing process is slow, but faster than regular 3D printing. Other than being capable of creating complex designs, such as very detailed cake decorations or food arranged in unusual shapes, the Foodini can be useful for recipes that require precision and dexterity, like homemade pizza or filled pasta.

Currently, the device only prints the food, which must be then cooked as usual. But a future model will also cook the preparation and produce it ready to eat.

The idea also comes with a social element too. "There's a touchscreen on the front that connects to a recipe site in the cloud, so it's an internet-of-things, connected kitchen appliance," said Kucsma. Users will also be able to control the device remotely using a smartphone, and share their recipes with the community.

That is, if people don't balk at the idea of eating printed food. "We have done tests and everybody liked the food," explains Kucsma. "Take the microwave oven, for example: in the 70s, people were a bit fearful about it, they thought food could be poisoned with radiation or something, but fast forward 30 years, and there's one in every household. This is real food, with real fresh ingredients, it's just prepared using a new technology."

The company is completing a round of financing and plans to begin mass manufacturing in the second half of 2015.

# [futureScience&Tech&Innovation] DHL to test self-driving delivery trucks in 2018

<http://money.cnn.com/2017/10/11/technology/future/dhl-autonomous-delivery-truck/index.html>

In the future, the trucks from mail delivery giant Deutsche Post DHL may autonomously follow its delivery persons as they walk down streets to make deliveries. The company, which employees more than 500,000 across 220 countries, said it will begin testing self-driving delivery trucks in the second half of 2018.

**To get a fleet up and running(让一个舰队运转起来),** DHL said it **will equip some of its existing electric delivery trucks with** new self-driving **sophisticated equipment** from tech company NVIDIA and the automotive supplier ZF.

Deutsche PostDHL hasn't revealed how many vehicles will be used -- or where the tests will **take place** -- but said the move is expected to make its delivery service more efficient. The experiment will feature self-driving delivery trucks that follow a delivery person en route to deliver packages. The person wouldn't need to get back into the truck between dropping off packages; they'd need to remove packages from the rear of the truck.

The company has not revealed how the truck will identify and accurately follow its delivery people. Perhaps one option could include a delivery person carrying a sensor in their pocket that transmits their location to the vehicle. Another potential option: training a vehicle's cameras to identify a delivery person's appearance and follow them.

Deutsche Post DHL will also test whether autonomous vehicles can be used to exchange containers in **parcel** centers. The announcement is the latest reminder of the intense interest surrounding the autonomous vehicles industry. [Intel has forecasted](https://newsroom.intel.com/news-releases/intel-predicts-autonomous-driving-will-spur-new-passenger-economy-worth-7-trillion/) self-driving technology will trigger a $7 trillion market by 2050.

The rapid gains in computing power is **fueling** the market. For example, Deutsche Post DHL partner NVIDIA now has a new and more advanced supercomputer that runs a self-driving software program for autonomous vehicles.The brand's technology is widely used among companies developing self-driving services.

Amid concern that autonomous technology replacing human drivers, DHL said there will be be roles for its workforce. Many competitors are circling 2020 as a year to broadly **deploy** these technologies to the public. But experts say it may be a decade before such technology is mainstream.

But companies already have a head start: Uber is offering self-driving rides in Pittsburgh and Waymo, the self-driving arm of Google's parent company, has a current ride service in Phoenix.

**In addition to** self-driving technology, DHL rival [UPS has also tested **drone** delivery](http://money.cnn.com/2017/02/21/technology/ups-drone-delivery/index.html?iid=EL) from **atop** some of its trucks. Meanwhile, Amazon has spent years developing a **drone** delivery program and completed its [first delivery in Britain last year](http://money.cnn.com/2016/12/14/technology/amazon-drone-delivery/index.html?iid=EL).

// atop /əˈtɒp/

1.PREP If something is atop something else, it is on top of it. 在...上

例：

Under the newspaper, atop a sheet of paper, lay an envelope.

报纸下面的一张纸上，放着一个信封

# === STOP HERE ======

# Google humanoid robot “Alphago” outwitted the human chess champion

<http://money.cnn.com/2016/03/10/technology/alphago-google-deepmind-go-lee-computer/index.html>

outwit  sb [,aut'wit] 1. 以智慧、机敏胜过；[古语]在智慧(或知识)上超过

The rise of the machines was on full display Thursday in Seoul when a Google computer again defeated the top-ranked human player of Go, the world's most complex board game.

The computer's second consecutive victory over Lee Se-dol, the Go world champion, will be seen as a significant advancement in artificial intelligence.

The South Korean must now win three games in a row against Google DeepMind's AlphaGo to triumph in the best-of-five series. The [computer won its first match](http://money.cnn.com/2016/03/09/technology/google-deepmind-go/?iid=EL) against Lee on Wednesday.

If Lee wins the series, he gets $1 million and reasserts his title as global champ; a convincing win by AlphaGo would signal the end of human dominance in the insanely complicated board game. (Google will donate the prize money to charity.)

Lee, 33, holds the highest possible professional ranking for a Go player and has been called "the Roger Federer of Go."

Go originated thousands of years ago in China. During play, two opponents take turns placing black and white stones on a square grid of 19 lines by 19 lines. The goal is to take territorial control of the board by using pieces to surround those of the other player.

Games can last for hours, and winning requires immense mental stamina, intuition and strategy.

Teaching computers to master Go has been a kind of holy grail for artificial intelligence scientists. There are more possible configurations of the board than atoms in the universe, according to Demis Hassabis, CEO of Google DeepMind, which developed AlphaGo.

"Go is the most profound game that mankind has ever devised," Hassabis said. "Go is a game primarily about intuition and feel rather than brute calculation, which is what makes it so hard for computers to play well."

Last October, AlphaGo convincingly [defeated](http://money.cnn.com/2016/01/28/technology/google-computer-program-beats-human-at-go/?iid=EL) the European Go champion, Fan Hui, obliterating him in five consecutive games. The computer's victory was considered a huge breakthrough, occurring roughly a decade sooner than experts had expected.

Software programs long ago became adept at classic board games like backgammon. Their rapid progress culminated in the historic victory of IBM's Deep Blue computer over world chess champion Gary Kasparov in 1997.

But it's taken another two decades for artificial intelligence to get to grips with the mind-boggling complexities of Go. Until recently, software programs could only compete with human amateurs.

Google researchers say they expect AlphaGo's technology will be put to use in the company's own apps, and in areas such as medicine.

Google [acquired DeepMind in 2014](http://money.cnn.com/2014/01/27/technology/google-deepmind/index.html?iid=EL) to bolster its portfolio in artificial intelligence and robotics.

<http://money.cnn.com/2016/03/12/technology/google-deepmind-alphago-wins/index.html>

In the ultimate battle of man versus machine, humans are running a close second.

On Saturday, a Google ([GOOG](http://money.cnn.com/quote/quote.html?symb=GOOG&source=story_quote_link)) computer clocked its third consecutive victory over Lee Se-dol, the long-reigning global champion of the world's most complex board game. That win makes the machine the clear winner in a best-of-five series.

The achievements of the Google DeepMind computer, AlphaGo, are considered a significant advancement in artificial intelligence.

"To be honest, we are a bit stunned," said Google DeepMind CEO Demis Hassabis, after AlphaGo's third win. "We came here to challenge Lee Se-dol, as we wanted to learn from him and see what AlphaGo was capable of."

Since Wednesday, Lee and AlphaGo have been engaged in these high stakes games in Seoul. But AlphaGo has consistently won each of the games played thus far.

Lee, who looked a bit glum, said he wasn't "sure what to say."

"I feel kind of powerless," he said to reporters. "Even if I were to go back and redo the first game, I think that I wouldn't have been able to win, because at the time, I misjudged the capabilities of AlphaGo."

Even though the computer is now the clear winner out of the full match, there are two more games to be played in the coming days -- one Sunday, and the last on Tuesday.

Lee, who holds the highest possible professional ranking for a Go player and has been called "the Roger Federer of Go," asked the public to continue to follow the remaining games.

Go originated thousands of years ago in China. During play, two opponents take turns placing black and white stones on a square grid of 19 lines by 19 lines. The goal is to take territorial control of the board by using pieces to surround those of the other player.

[Related: Computers will overtake us when they learn to love, says futurist](http://money.cnn.com/2016/03/08/technology/ray-kurzweil-artificial-intelligence/index.html?iid=EL)

Games can last for hours, and winning requires immense mental stamina, intuition and strategy.

Teaching computers to master Go has been a kind of holy grail for artificial intelligence scientists. There are more possible configurations of the board than atoms in the universe, according to Demis Hassabis, CEO of Google DeepMind, which developed AlphaGo.

"Go is the most profound game that mankind has ever devised," Hassabis said, before the games against Lee started. "Go is a game primarily about intuition and feel, rather than brute calculation, which is what makes it so hard for computers to play well."

Last October, AlphaGo convincingly defeated the European Go champion, Fan Hui, obliterating him in five consecutive games. The computer's victory was considered a huge breakthrough, occurring roughly a decade sooner than experts had expected.

Software programs long ago became adept at classic board games like backgammon. Their rapid progress culminated in the historic victory of IBM's Deep Blue computer over world chess champion Gary Kasparov in 1997.

[Related: Mark Zuckerberg says there's nothing to fear from artificial](http://money.cnn.com/2016/01/27/technology/mark-zuckerberg-artificial-intelligence/index.html?iid=EL)

But it has taken another two decades for artificial intelligence to get to grips with the mind-boggling complexities of Go. Until recently, software programs could only compete with human amateurs.

Google researchers say they expect AlphaGo's technology will be put to use in the company's own apps, and in areas such as medicine.

Google acquired DeepMind in 2014 to bolster its portfolio in artificial intelligence and robotics.

AlphaGo's wins are an astonishing success for the world of artificial intelligence, but futurist Dr. Michio Kaku said Friday that its simply a "sophisticated adding machine."

Humans will still ultimately win the war against computers, because of things Kaku, and other futurists such as Ray Kurzweil, say can't be computed -- love, leadership skills, innovation and common sense.

"People who are involved with intellectual capital will be the winners of the future," Kaku said.

# Google's AI robot just beat the world's best Go player

<http://money.cnn.com/2017/05/25/technology/alphago-china-ai/index.html>

A computer system that Google engineers trained to play the game Go beat the world's best human player Thursday in China. The victory was AlphaGo's second this week over Chinese professional Ke Jie, clinching the best-of-three series at [the Future of Go Summit in Wuzhen.](http://money.cnn.com/2017/05/24/technology/google-go-ai-china-censorship/?iid=EL)

Afterward, Google engineers said AlphaGo estimated that the first 50 moves -- by both players -- were virtually perfect. And the first 100 moves were the best anyone had ever played against AlphaGo's master version.

[Related: Google's man-versus-machine showdown is blocked in China](http://money.cnn.com/2017/05/24/technology/google-go-ai-china-censorship/?iid=EL)

"What an amazing and complex game! Ke Jie pushed AlphaGo right to the limit," said DeepMind CEO Demis Hassabis on Twitter. DeepMind is a British artificial intelligence company that developed AlphaGo and was purchased by Google in 2014.

The board's 19-by-19 grid is so vast that it allows a near infinite combination of moves, making it tough for machines to comprehend. Games such as chess have come quicker to machines.

[Related: Elon Musk's new plan to save humanity from AI](http://money.cnn.com/2017/04/21/technology/elon-musk-brain-ai/?iid=EL)

The Google engineers at DeepMind rely on deep learning, a trendy form of artificial intelligence that's driving remarkable gains in what computers are capable of. World-changing technologies that loom on the horizon, such as autonomous vehicles, rely on deep learning to effectively see and drive on roads.

AlphaGo's achievement is also a reminder of the steady improvement of machines' ability to complete tasks once reserved for humans. As machines get smarter, there are concerns about how society will be disrupted, and if all humans will be able to find work.

Historically, mankind's development of tools has always created new jobs that never existed before. But the gains in artificial intelligence are coming at a breakneck pace, which will likely accentuate upheaval in the short term.

The 19-year-old Ke and AlphaGo will play a third match Saturday morning. The summit will also feature a match Friday in which five human players will team up against AlphaGo.

# Google and IBM Watson use AI to help diagnose breast cancer

<http://money.cnn.com/2017/03/03/technology/google-breast-cancer-ai/?iid=EL>

Google, which not along ago was using artificial intelligence to identify cat pictures, has moved onto something bigger -- breast cancer.

[Google announced Friday](https://research.googleblog.com/2017/03/assisting-pathologists-in-detecting.html) that it has achieved state-of-the-art results in using artificial intelligence to identify breast cancer. The findings are a reminder of the rapid advances in artificial intelligence, and its potential to improve global health.

Google used a flavor of artificial intelligence called deep learning to analyze thousands of slides of cancer cells provided by a Dutch university. Deep learning is where computers are taught to recognize patterns in huge data sets. It's very useful for visual tasks, such as looking at a breast cancer biopsy.

With 230,000 new cases of breast cancer every year in the United States, Google ([GOOGL](http://money.cnn.com/quote/quote.html?symb=GOOGL&source=story_quote_link), [Tech30](http://money.cnn.com/technology/tech30/index.html?iid=EL)) hopes its technology will help pathologists better treat patients. The technology isn't designed to, or capable of, replacing human doctors.

"What we've trained is just a little sliver of software that helps with one part of a very complex series of tasks," said Lily Peng, the project manager behind Google's work. "There will hopefully be more and more of these tools that help doctors [who] have to go through an enormous amount of information all the time."

Peng described to CNNTech how the human and the computer could work together to create better outcomes. Google's artificial intelligence system excels at being very sensitive to potential cancer. It will flag things a human will miss. But it sometimes will falsely identify something as cancer, whereas a human pathologist is better at saying, "no, this isn't cancer."

"Imagine combining these two types of super powers," Peng said. "The algorithm helps you localize and find these tumors. And the doctor is really good at saying, 'This is not cancer.'"

For now, Google's progress is still research mode and remains in the lab. Google isn't going to become your pathologist's assistant tomorrow. But Google and many other players are striving toward a future where that becomes a reality.

Jeroen van der Laak, an associate professor in digital pathology at Radboud University Medical Center, believes the first algorithms for cancer will be available within a couple years, and large-scale routine use will occur in about five years. His university provided the slides for Google's research.

The technology will be especially useful in parts of the world where there's a shortage of physicians. For patients who don't have access to a pathologist, an algorithm -- even if imperfect -- would be a meaningful improvement. Van der Laak highlighted India and China as two underserved areas.

# [tech] Google halts drone project to beam internet to rural areas

Google has **shuttered** its plan to use massive solar-powered drones to deliver/**beam** internet to rural and remote parts of the world. Alphabet, as Google is formally known, disbanded解散 the drone project a year ago. But news of the decision first **surfaced**浮出水面 Wednesday. The drone project is now integrated with a group of robotics projects at Google's research and development factory, X. But this doesn't mean Google has given up on **novel**/creative ways of **beaming**/delivering internet to areas without access. It's still investing in Project Loon, which sends balloons to the edge of space to **beam**/deliver internet to the land below.

X said in a statement Project Loon was seen as a more **promising**有望成功的; 有前途的 way to connect parts of the world with internet. The division has not ruled out revisiting high-altitude unmanned aerial vehicles in the future, but concluded Loon was more economically and technically **feasible**/**viable**.

Google isn't the only company to face similar **formidable** challenges. The federal government is currently [investigating a 2016 crash](https://www.bloomberg.com/news/articles/2016-11-21/facebook-experimental-drone-accident-subject-of-safety-probe) of FB's solar drone. Many previous employees continue to work on other aviation projects intended to change the way we live, e.g. build small drones that will eventually make deliveries.

**The demise /dɪˈmaɪz/ of** the project Titan came as Google **underwent** its Alphabet reorganization in 2015 and marked a new focus on managing costs. Google has long been **a golden child** of the digital age, offering a search engine and other online services that have generally enjoyed instant success. But thecompany's **forays into** hardware have proven to be a tougher go, including failures such as Google Glass.

X's leaders have stressed that this is the nature of innovation. Without trial and error, the factory won't be able to successfully launch **mind-blowing** "moonshot" technologies. Most recently, [X **spun out** its self-driving car program](http://money.cnn.com/2016/12/13/technology/google-waymo/?iid=EL) as a standalone Alphabet company in December. Despite some **hiccups,** like[high-profile executive who](https://www.linkedin.com/in/chris-urmson-5392273) was **poached**, it's seen as a global leader in autonomous vehicles software.

* /dɪˈmaɪz/ The **demise of something** or **the demise of someone** is their end or death. (e.g. 项目，运动的)终止/告终; 死[ the demise of the reform movement改良运动的告终; the demise of the intellect reform 文化大革命的的告终 ]
* If an organization **poaches**members or customers from another organization, they secretly or dishonestly persuade them to join them or become their customers. (通过不正当的手段或秘密) 挖走 (其他组织的成员或顾客); 挖人 e.g. Companies sometimes poach employees from one another. 一些公司有时会相互挖走对方的雇员
* 你真是**一个极优秀的孩子** You are truly **a golden child,** because you succeed in university as well.   e.g. Jill is a golden child, handsome and athletic **=> a top-notch student, a top-notch university一流的拔尖的**
* When you have **hiccups**, you make repeated sharp sounds in your throat, often because you have been eating or drinking too quickly. 嗝 => **You can refer to a small problem or difficulty as a hiccup, especially if it does not last very long or is easily corrected. 小难题 e.g.** A recent sales hiccup is nothing to panic about. 最近销售上出的**小问题**用不着惊慌
* shutter /ˈʃʌtə/  shut => shutter 1. Shutters are wooden or metal covers fitted on the outside of a window. They can be opened to let in the light, or closed to keep out the sun or the cold. 百叶窗 = blinds e.g. She opened the shutters and gazed out 凝视over village roofs. 2. The shutter in a camera is the part which opens to allow light through the lens when a photograph is taken. (照相机的) 快门 [ press the shutter 按快门] e.g. There are a few things you should check before pressing the shutter release. 在按快门之前，有几件事情你应该检查
* Someone or something that is promising seems likely to be very good or successful. 有望成功的; 前景很好的； 有前途的 [ a promising student ] e.g. A school has honoured one of its brightest and most promising former students. 一所学校给其培养过的最聪明、最**有前途的**学生中的一位颁了奖
* beam /biːm/  CET4 TEM4 (beaming,beamed,beams)

1.V-T/V-I If you say that someone is beaming, you mean that they have a big smile on their face because they are happy, pleased, or proud about something. 绽开笑容 e.g. Frances beamed at her friend with undisguised admiration. 弗朗西丝用毫不掩饰的羡慕的神情朝她的朋友们绽开了笑容。"Welcome back," she beamed. “欢迎回来，”她笑容满面地说。

2.N-COUNT A beam is a line of energy, radiation, or particles sent in a particular direction. (能量、辐射、粒子) 束

**[ laser beams激光束 ]**

4.N-COUNT **A beam of light** is a line of light that shines from an object such as a lamp. (光) 束 e.g A beam of light slices through the darkness. 一道光束划破了黑暗。

3.V-T/V-I If radio signals or television pictures are beamed somewhere, they are sent or delivered there by means of electronic equipment. 播送 e.g. The interview was beamed live across America.那场访谈同步播送至全美。E.g. The Sci-Fi Channel began beaming into 10 million American homes this week.科幻频道本周已经开始播送到1000万个美国家庭。

5.N-COUNT A beam is a long thick bar of wood, metal, or concrete, especially one used to support the roof of a building. 梁 e.g. The ceilings are supported by oak beams. 天花板由橡木横梁支撑着。

* spin out (spin, spun, spun) If you spin something out, you make it last longer than it normally would, prolong or extend 拖延 e.g. My wife's lawyer was anxious to spin things out for as long as possible. 我妻子的律师极希望尽可能拖延时间
* 令人惊叹的, 激动人心的（科技） If you describe something as **mind-blowing**, you mean that it is extremely impressive or surprising. 令人印象极深刻的; 令人极震惊的 e.g. When you reflect on how far we humans have come fromthe prehistoric caves **to mind-blowing technological advancements**, you would feel the power of imagination.  当你思考我们人类发展，从史前的洞穴生活到现在**令人惊叹的**科学技术的突飞猛进，你会感到想象力的威力
* foray /ˈfɒreɪ/ 初次涉足（xxx领域,xxx事情）; (带有刺激性或冒险性的) 短程旅行; 突袭

1.N If you **make forays into** a new or unfamiliar type of activity or a field of market or industry, you start to become involved in it. 初次涉足（xxx领域,xxx事情） e.g. The demise /dɪˈmaɪz/of the project Titan came as Google underwent its Alphabet reorganization in 2015 and marked a new focus on curtailing costs. Google has long been a golden child of the digital age, offering a search engine and other online services. But the company's forays into hardware have proven to be a tougher blunder大错, including failures such as Google Glass. e.g. Armani, the Italian fashion house, has made a discreet foray into furnishings. Armani已谨慎地涉足室内装饰业。

2. N.You can refer to a short trip that you make as a foray if it seems to involve excitement or risk, for example, because it is to an unfamiliar place or because you are looking for a particular thing. (带有刺激性或冒险性的) 短程旅行 [ make a foay into some place ] e.g. Most guests make at least one foray into the town. 大多数客人至少去过一次城里短程旅行。

3. If a group of soldiers make a foray into enemy territory, they make a quick attack there, and then return to their own territory. N突袭 => V raid = make a fory into enemy terriroty. When soldiers raid a place, they make a sudden armed attack against it, with the aim of causing damage rather than occupying any of the enemy's land. 突袭 e.g. These base camps were used by the PKK guerrillas to make forays into Turkey 对土耳其进行突袭.

# Part 1) Predict future (e.g. futurist tech)

## 1st row) visionary 有远见的人／梦想家

## Stop) Lexical resource

* outwit sb [,aut'wit]

1. 以智慧、机敏胜过sb.；
2. [古语]在智慧(或知识)上超过

* By no stretch of the imagination… 不管你怎么想e.g. **By no stretch of the imagination** **could** you call him ambitious.  不管你怎么想， **也不能**说他存有野心。  
  **By no stretch of the imagination** **is** it over. 不管你怎么想，都没有结束
* 困境

|  |  |
| --- | --- |
| 1. sb's困境  **2.V. 保证; 宣誓做xxxx 3.(订婚的）誓言** | plight /plaɪt/ **[ 难民的困境 refugees' plight; the plight of homeless perons; 庇佑寻求者的困境: asylum seekers' plight; my plight ]**  e.g. The lawyer hopes the film will bring fresh international attention to the plight of an estimated 14,500 asylum seekers living in Hong Kong. 1. N If you refer to someone's plight, you mean that they are in a difficult or distressing situation that is full of problems. 困境 e.g. The nation saw the plight of the farmers, whose crops had died because of drougt. 该国看到了农民因庄稼死亡而陷入困境。 2. V to give or pledge or give you my words 保证;/宣誓做xxxx **[ plight sb's words to do sth ]** e.g. He plighted his word to attempt it  3. N a plight is a solemn promise, esp of engagement; pledge (订婚的）誓约; 婚约 //sign a pledge 签保证书 |
| 困境; 逆境 | adverse, adversity /**əd**ˈvɜːsɪtɪ/ **[ 从逆境中反弹 get out of adversity; bounce back from adversity ]**  Adversity /**əd/** is a very difficult or unfavourable situation, sort of **predicament**, **plight** 困境; 逆境 e.g. He showed courage in **adversity/əd//predicament/plight.** 他在逆境中显示出了勇气  **e.g. She bounces back from adversity/predicament/plight. She's very resilient. 她从困境中反//resilient: strongly adaptive, and recover quickly.** |
| 困境 | predicament /prɪˈdɪkəmənt**/ [ 处于困境窘境中 in a predicament => in trouble = in a pickle => = i[n a] tight spot => in a desperate situation ]** If you are i[n a] predicament, you are in an unpleasant situation that is difficult to get out of. 困境  e.g. Hank explained our predicament. 汉克说明了我们的困境。  e.g. I am in the identical predicament with yourself. 我和你处于同样的窘境之中  E.g Currently, our project is trapped i[n a] predicament, with considerable formidable challenges.... OMG, this is a really killer project. // a killer task = such a difficult/daunting task // a killer exam |
| 处于困境窘境中 (有麻烦或困难的局面) | if you are **in a pickle, or in a tight spot**, you are in trouble, in a predicament, or a difficult situation. 但是，如果你处于困境时，你就有麻烦或困难的局面 [ 处于困境窘境中 in a predicament = in a pickle => (more severe) = i[n a] tight spot => in a desperate situation, ] => pickle: An edible product, such as a cucumber or green pepper, that has been preserved/marinated腌 and flavored in a solution of marinade腌泡汁, eg brine盐水 or vinegar. 腌菜，泡菜. eg Can I have more pickles in my sandwich. |
| 处境(很）艰难; 困境； 于尴尬/艰难的处境 | in a tight spot **[ in a predicament = in a pickle => (more server) => in a tight spot => in a desperate situation ]**  e.g. The Russia-Georgia conflict has put Turkey in a tight spot. 俄罗斯和格鲁吉亚的冲突把土耳其置于尴尬/艰难的处境。  E.g. The private schools without big investment are in a tight spot: they need tuition to pay their operating costs. 那些没有得到大规模捐助的私立学校处境艰难  e.g. The expected jump in prices puts the Bank of England in a tight spot. Higher interest rates could support the pound and limit price rises, but would risk making the slowdown worse and hurting consumers by jacking up/increase repayments on mortgages and other loans. NIESR expects the central bank will downplay the rise in inflation and leave interest rates unchanged for about two years, which is roughly how long it will take for the U.K. to negotiate its exit from the EU.  // If you downplay a fact or feature, you try to make people think that it is less important or serious than it really is. 轻描淡写 //增加(价钱、工资等) jack up (salary, payment, debt) |
| 1摆脱困境， 逃脱,脱身；脱离危险   2 电话响个不停 (电话一直忙着，占线） | (cellphone) ring off the hook 电话响个不停/电话一直忙着; lift off the hook 摘机 e.g. The dire situation has taken anti-pollution devices (e.g. masks, air purifier) from niche to mainstream, with a report by research firm TechSci predicting that the air purifier market in India will go from 40,000 units to 100,000 units over the next year and generate over $200 million in revenue by 2021. Jill, the air purifier manager, apologized for not getting back to me sooner because his phone has been ringing off the hook (电话一直忙着，占线). The low-cost masks are also flying off the shelves.   //我5分钟内回你电话：I’ll get back to you in 5 mins. //fly off the shelves 倾售一空 V.S. (product) hit the shelves 新品上架 |
| [ get you off the hook: 让你摆脱困境/让你脱身 ] e.g The blind date sucks, is so awkward...I'm in a desperate situaiton, please someone get me off the hook. e.g. At the end of her mother's birthday party, a bouquet/nosegay of flowers or some other last minute gift for her mother would be nice and probably get you off the hook 也许还让你摆脱困境/让你脱身 e.g. Do not declude youself that this solution can get us off the hook. 不要自欺欺人说这样就可以让我们摆脱困境/脱身了。  //['bæŋkwɪt] banquet = dinner/feast; [bʊ'keɪ; bəʊ'keɪ; 'bʊkeɪ]: a wedding bouquet/nosegay; a bouquet of flowers = a nosegay of flowers 一束鲜花 //[buː'tiːk] boutique 精品店；专卖流行衣服的小商店 boutique hotel //自欺欺人: delude youself /dɪˈluːd/ If you delude yourself, you let yourself believe that something is true, even though it is not true. |
| 炼狱；涤罪；暂时的苦难 | purgatory /ˈpɜːɡətərɪ/ 1. purgatory is a temporary condition of torment or suffering; You can describe a very unpleasant experience as purgatory. 炼狱般的经历(暂时的苦难 ) [ tide over that purgatory; how to get out of that purgatory; economic purgatory 经济炼狱之苦] e.g. Every step of my last years in my life was purgatory. 的每一步都是炼狱般的折磨; e.g. You cannot imagine how she tided over that purgatory during that gruelling time难熬的折磨人的时期. e.g Major transportation hubs have to be plunked down at the very periphery of city limits, leaving jetlagged travelers to deal with the confusion of how to get out of the purgatory that is western Queens or central New Jersey. On top of that/besides, all of the city's three major airports, JFK, Newark, and LaGuardia ranked dead last among major American airports for on-time arrival. //purge rivals, purge enemies; purgative ['pɜːgətɪv] 泻药= purge medicines; purgatory /ˈpɜːɡətərɪ/: 炼狱般的经历(暂时的苦难 ) 2 N. Purgatory is the place where Roman Catholics believe the spirits of dead people are sent to suffer for their sin罪恶；罪孽 s before they go to heaven. (罗马天主教相信的)炼狱 [ in purgatory ] e.g Prayers were said for souls in purgatory. 为炼狱中的亡灵做的祷告。 |

|  |  |
| --- | --- |
| 狼吞虎咽 | **snarf down [snɑrf] /devour/engulf/guzzle food:** to eat or drink rapidly, eagerly, and greedily  eg Do not snarf quickly, not good for your health/soundness. eg He was so ravenous. He just snarfed down/devour three bowls of rices and one piece of pizza. eg Do not snarf/devour so quickly, your stomach cannot secrete enough digestive juices分泌 液to digest the income.  //饥肠辘辘的; 饿极的 ravenous /ˈrævənəs/ ravenously |
| (被火， 洪水，泥石流）吞噬， 狼吞虎咽 | 狼吞虎咽 engulf the food = devour the food = snarf down = guzzle the food  e.g He was so raveous; and he devoured/snarfed down three bowls of noodle. eg Do not snarf/devour so quickly, your stomach cannot secrete分泌[sɪ'krit] enough digestive juices消化液to digest the income. //分泌 secrete the milk; // 饥肠辘辘的; 饿极的 ravenous /ˈrævənəs/ ravenously  e.g. She began to eat ravenously = devour/snarf down/engulf/guzzle the food |
|  | (building) be enguled/devoured吞噬 by flood/fires/tsunami/mudslides eg Over the past week, the Keleti station had become a focal point of the crisis engulfing吞噬 parts of Europe as an unprecedented/all-time wave of people -- mostly influx of refugees 难民如洪水一般的 涌入 fleeing conflict in Syria, Iraq and Afghanistan, the war-ravaged/torn nation -- seek to reach Western Europe and request political asylum [ə'saɪləm]. eg The fireball completely devoured/engulfed吞噬 the whole building. e.g. The world's treacherous /ˈtrɛtʃərəs/ (危险的; 变化莫测的) weather with devastating blizzard暴风雪 and tornadoes/twsters wreaked havoc across the globe. Torrential rains in parts of South America, blamed/shattered on El Nino, have displaced转移 more than 150K people. In the U.S., a mammoth['mæməθ] storm巨大的风暴 system engulfing/devouring吞食 much of the country has claimed at least 24 lives, including four soldiers in Missouri. //(natural disaster) 对xxx 肆虐: wreak havoc ['hævək](on sth) // 政治庇佑: political asylum, asylum seeker; 大赦，特赦: political amnesty |
| 狼吞虎咽； (汽车)费油 | guzzle /ˈɡʌzəl/ (guzzling,guzzled,guzzles) 1. V-T/V-I If you guzzle something, you drink it or eat it quickly and greedily. 狼吞虎咽 **snarf down [snɑrf] /devour/engulf/guzzle food**: to eat or drink rapidly, eagerly, and greedily  e.g. Melissa had guzzled gin and tonics like they were lemonade.  e.g. ravenous /ˈrævənəs/ ravenously  1.ADJ If you are ravenous, you are extremely hungry.; e.g. Amy realized that she had eaten nothing since leaving home that morning, and she was ravenous. 她饿极了。  e.g. She began to eat ravenously = devour/snarf down/engulf/guzzle the food 她开始狼吞虎咽地吃起来 2. V-T If you say that a vehicle guzzles fuel, you mean that it uses a lot of it in a way that is wasteful and unnecessary. (汽车)费油 →see also gas guzzler 例： The plane was deafeningly noisy, guzzled fuel, and left a trail of smoke. 这架飞机噪音震耳，费油，还留下一屁股烟雾。 3. in ADJ -guzzling 费油的； 耗油的 eg.. It's an alternative to energy-guzzling transportation. e.g. The boom of the 1980s led to a taste for petrol-guzzling cars. **[费油的； 耗油的(车) energy-guzzling V.S. 节能的(灯泡；车) energy-efficient ]** 20世纪80年代的经济繁荣导致了对 高油耗/费油的 汽车的喜爱。 ...big, energy-guzzling houses. ...大的、浪费能源的房屋。 |
| (像猪)暴饮暴食;大吃特吃. | pig out (pigging,pigged,pigs) If you say that people are pigging out, you are criticizing them for eating a very large amount at one meal or over a short period of time. 暴饮暴食; 大吃特吃; e.g. She's a bulimic. Every time after she piggs out, she rushes to the toilet and starts to vomit. e.g. Some are so accustomed to pigging out, they can't cut back. 些人习惯暴饮暴食了，他们不可能缩减食量 eg. Well, we'll do your own Thx Giving; and pig out 大吃特吃. |

* treadmill /ˈtrɛdˌmɪl/   
  1.N  You can refer to a task or a job as a treadmill when you**’ve got** to keep doing it although/even though/even if it is unpleasant and exhausting. **单调的工作/任务 [ my job is just a treadmill; This task is such a treadmill ]** e.g. I exhausted myself on an endless **treadmill** to package the translation files. 一份没完没了的 **单调工作**上。 E.g. Packaging files for DP translation is such a treadmill. 翻译打包真的是一件 **单调工作**  
  2.N  A treadmill is a piece of equipment, for example, an exercise machine, consisting of a wheel with steps around its edge or a continuous moving belt. The weight of a person or animal walking on it causes the wheel or belt to turn. 跑步机， 踏车 **[ running treadmill in gym ]**  
  3. When we talk about the **'debt treadmill,**' = mean “we are slaves to debt and cannot get off that track; we’re **indebted person负债累累的人/国家**”  
  e.g. Since I bought my 2nd house, I’m trapped in a “**debt treadmill”.**
* **战争蹂躏的国家 war-ravaged/torn country; 债务蹂躏的国家 debt-ravaged nation 负债累累的国家 an indebted nation; in indebted person;**
* **liken /ˈlaɪkən/ A to B. 把…比作/比拟 = compare A to B 把...比作，比喻为**  
  If you liken one thing or person to another thing or person, you say that they are similar.  
  e.g. She likens marriage to slavery. 她把婚姻比作奴役  
  e.g. When we talk about '**toxic assets,**' we are **likening(['laɪkən]比拟) them to e.g. chemical waste**, which is related to air pollution.

e.g. When we use the term **'economic meltdown/recession**,' we are **likening(['laɪkən]比拟) it to a catastrophic even**t like a nuclear disaster

* 合成的(产品) **Synthetic products** are made from chemicals or artificial substances rather than from natural ones.
* **N) 樟脑丸; 卫生球 V) 把（计划，提议） 暂停; 暂时关闭(工厂;核电站), 束之高阁 mothball /ˈmɒθˌbɔːl/**1.N) A mothball is a small ball made of a special chemical, which you can put among clothes, shoes, blankets in your **wardrobe衣柜 ['wɔːdrəʊb]** in order to keep **moths蛾** or bugs away. 樟脑丸; 卫生球  
  2.V-T If sb. in authority **mothballs a plan/proposal/factory/Nuclear Power Plant/piece of equipment,** they decide to stop developing or using it, perhaps temporarily. **把（计划，提议） 暂停; 暂时关闭(工厂;核电站), 束之高阁**e.g. 暂时关闭<巴丹半岛核电厂> ...the decision to **mothball the Bataan Nuclear Power Plant**…

e.g. Because of a desperate lack of funding, DP PM has decided to **mothball the 7.6 PII translation plan**.

* **innumerable /ɪˈnjuːmərəbəl/ = endless = infinite = countless**Innumerable means very many, or too many to be counted. 数不清的; 无数的 = endless = infinite e.g. He has invented **innumerable** excuses, told **endless** lies. 数不清的借口，说了无止尽的谎言
* Da Vinci [də vinchi]
* **metropolis [mə'trɑpəlɪs], metropolitan [,mɛtrə'pɑlɪtən] 大都市 V.S.国际都市 cosmopolis**
* **metropolis [mə'trɑpəlɪs], metropolitan [,mɛtrə'pɑlɪtən],** e.g. Xi’an, Taiyuan; a metropolis is the largest, busiest, and most important city in a country or region. 大都市 e.g. Xi’an is the most important financial and industrial **metropolis** in West of CHINA, which is the starting point of the worldwide famous silk road. However, Xi’an is still NOT a cosmopolis (international city)
* **cosmopolis [kɑz'mɑpəlɪs]; cosmopolitan ['kɑzmə'pɑlətn]**  = an international city 国际化都市e.g. SH, HK, Seoul, Tokyo, and NY are all **cosmopolitan cities.**
* **cosmopolitan ['kɑzmə'pɑlətn]**
  + 1. A cosmopolitan place or society is full of people from many different countries and cultures, this place or society is of diversity and multi-culture. 国际化的世界性的(表赞许) **[ a cosmopolitan city = a cosmopolis = an international city一个国际化都市]**e.g. GuBei community is technically the first **cosmopolitan community** in SH.
  + 2.ADJ **sb. who is cosmopolitan** has had a lot of contact with people and things from many different countries and as a result is very open to different ideas and ways of doing things. Generally, this person owns diversity. **见多识广的(人，家庭) [ sb. is cosmopolitan; a family is cosmopolitan ]**   
    e.g. **Vivian is very cosmopolitan** since she’s **dwelling in** BiYun community, one of the most famous **cosmopolitan areas** in SH. (国际化的小区之一)  
    e.g. The family is rich, and extremely **sophisticated** and **cosmopolitan**. 这个家庭殷实富足，深谙世故，又**见多识广**
* frivolous /ˈfrɪvələs/

1. If you **describe sb. as frivolous**, you mean they behave in a silly or light-hearted (轻松的；无忧无虑的) way, rather than being **serious, careful, and sensible/rational**. (不认真的不理智的) 轻率的(人)   
=> synonym: flighty 轻浮的(not very serious or reliable and keep changing from one activity, idea, or partner to another. )

e.g. I just found I was a bit too frivolous to be a doctor. 自己有点儿太 **轻率**e.g. Travis was too frivolous when working on DP projects. 工作太 **轻率**

2. If you describe an activity as **frivolous**, you disapprove of it because it is not useful and wastes time or money; **it’s not worth your time, money, or effort**. 无用的/浪费的(不值得花时间精力的) **[ 无用的/浪费的开销 frivolous expenses ]**e.g I’ve got to **cut back on/curtail/pare down**  some of my **frivolous expenses,** such as buying coffee in the morning or online-shopping.

e.g. The group says it wants politicians to stop wasting public money from **tax payers纳税人** on what it believes are **frivolous projects. 无用的/浪费的项目**

* **hedonist, hedonism V.S. carpe diem** /ˈkɑːpɪ “diəm/ => per diem [pəˈdiəm (差旅的)每日津贴
  + hedonist /ˈhiːdənɪst/: A hedonist is sb. who believes that having pleasure and enjoying happiness is the most important thing in life. 享乐主义者
  + carpe diem /ˈkɑːpɪ “diəm/ : enjoy the pleasures and have happiness **of the moment, without concern for the future** **及时**行乐
* n. 雏形(基本初始阶段)；基本原理 **rudiment, rudimental**

1. the **elementary** stages of any subject (usually plural) eg. He mastered only the **rudiments** of geometry.
2. rudimentary e.g.) 飞机的雏形 rudimentary planes e.g. By studying the flight of birds, **Da Vinci[də vinchi]** designed **rudimentary** “flying machines”, which in the 20th century, would become planes, hang gliders, sky divers, and helicopters.

* 灾难时刻; (基督教) 地球灭亡的那一天,最后审判日, **doomsday /ˈduːmzˌdeɪ/**

1. 灾难时刻  Doomsday is a day or time when you expect sth terrible, horrible, **catastrophic** [,kætə'strɑfɪk], or unpleasant is going to happen. e**.g. ...the doomsday scenario of civil war 灾难情景**。

2. (基督教) 地球灭亡的那一天,最后审判日 In the Christian religion, Doomsday is the last day of the world, on which God will judge everyone.

* **增强对（权力，公司，股份）的控制Get a grip on sth = control => tighten sb’s grip on sth = control**

* **我的一点点想法**e.g. I’d like to give you **a piece of my mind**.  
  e.g. Hey, zhangcong, I just wanna give your husband **a piece of my mind(我的一点点想法)** : “We can't always **have our head in the cloud好高骛 远,** we need to **keep our feet on the ground/get your both feet planted on terra firma脚踏实地**. It’s time to **get back to basics (返璞归真)** and be **a down-to-earth person(脚踏实地的人).** **Just get real! 现实点吧**e.g. We can't always **have our head in the cloud**, we need to be **down-to-earth = keep our feet on the ground/get our both feet planted on terra firma**. **Let’s get back to basics (返璞归真)** and **get real (现实点吧)!** 我们不能总是那么 好高骛 远，我们要脚踏实地
* 牧歌的; 田园诗的; (田园一般闲适恬静的)悠闲的  
  idyllic  [aɪ'dɪlɪk] **[ idyllic island 田园小岛; idyllic feeling; idyllic atmosphere; idyllic life：田园一般闲适的生活]**  If you describe sth as idyllic, you mean that it is extremely pleasant, simple, and peaceful without any difficulties or dangers. E.g. I really **cherish the memory of** the short **idyllic life** in ChaingMai.
* **Speculate V.S. conjecture V.S. infer**

|  |  |
| --- | --- |
| 猜测 , 揣测 | speculate /ˈspɛkjʊˌleɪt/  1. V猜测I If you **speculate about something,** you **make guesses about** its nature or identity, or about what might happen.  e.g. Critics of the project **speculate about** how many hospitals could be built instead. 批评者们则 猜想 这相当于可以建多少家医院。 e.g. The doctors **speculate/guess** that he died of a **cerebral  [sə'ribrəl] 大脑的haemorrhage['heməridʒ] 脑溢血** caused by a blow on the head. 医生们猜测他死于 **脑溢血**。 2. N 猜测 **speculation = conjecture = guess**; speculation is a conclusion, an opinion, or a theory reached by **conjecture or inference** 通过推测推论得到的结论、观点或理论  e.g. Your **speculations** are all quite close to the truth. 你的 揣测 都很接近于事实。  e.g. The president tried to dismiss **speculations/guess/conjecture** over the future of the **sluggish economy**. 总统努力消除对未来 **萧条的经济** 的悲观 猜测/估测.  3. V-I If sb **speculates in sth financially,** they buy properties in real-estate, stocks, bonds债券, or shares, in the hope of being able to sell them again at a higher price and make a **considerable** profit. **[ speculate in sth financially] 做<xxx领域做> 投机买卖,通过差价来赚钱**  e.g. The banks made too many risky loans which now can't be repaid, and they **speculated in property(real-estate)** whose value has now dropped.  **在<房地产业>做了投机买卖**  N) speculation: Engagement in risky business transactions or financial investment on the chance of quick attaining **considerable/immense/tremendous** profit. 投机买卖(从事冒险性商业交易或金融交易以期获得快速或大量的利润) **[ buy sth. as a speculation 投机购买某物; engage in speculation; 从事投机, 做投机生意 ]**  e.g. A commercial or financial transaction involving **speculation.**  eg **Speculation** is a dangerous way of trying to make a quick fortune**. 做 投机买卖** 是一种很危险的谋财之道 |
| conjecture | **conjecture** /kənˈdʒɛktʃə/ n/v V.S. **traffic congestion拥塞** 1. N A conjecture is a conclusion that is based on information **that is not certain or complete.** 推测 **[做xxx推论: make conjectures/inferences about sth; draw conjectures/inferences about sth ]**  e.g. That was a **conjecture/inference['ɪnfərəns],** not a fact. 那是个推测，不是事实。 e.g. There are several **conjectures/inferences**. 有几种 **推测**。  Eg. The commentators **made/draw various conjectures/inferences about** the outcome of the next election. 时事评论家对下一次选举结果 做了许多 推论 2. V-T/V-I When you conjecture, you form an opinion or reach a conclusion on the basis of information that is not certain or complete. 推测, **conjecture = infer, inference.** e.g. He **conjectured that** some individuals may be able to detect major calamities/catastrophe. 他 推测 有些人也许能察觉到重大灾难 |
| **(基于已经有的信息进行的)** 推断 | infer /ɪnˈfɜː/  V-T If you infer that something is the case, you decide that it is true **on the basis of information that you already have**. **(基于已经有的信息进行的)**推断  e.g. I inferred from what she said that you have **felt run-down**. 我从她的话里推断出你身体一直不大好。  => N inference /ˈɪnfərəns/ 1. An inference is a conclusion that you draw about something **by using information that you already have about it.** **(基于已经有的信息得出的)**推论/推断 **[做xxx推论: make conjectures/inferences about sth; draw conjectures/inferences about sth ]**  e.g. There were **two inferences/conjectures** to be drawn from her letter. 从来信可以得到 **两种推论**。  e.g. It had an extremely tiny head and**, by inference**, a tiny brain. 可以根据推断得出，大脑也小 |

* 怀念sth: [cherish](javascript:void(0);) [the](javascript:void(0);) [memory](javascript:void(0);) [of](javascript:void(0);) sth   
  E.g. I really **cherish the memory of** the short **idyllic life**[aɪ'dɪlɪk] in ChaingMai. //idyllic life: **田园一般闲适的生活**
* **脑溢血: cerebral**  **[sə'ribrəl] 大脑的haemorrhage['heməridʒ]**e.g. The doctors speculate/guess that he died of a **cerebral**  **[sə'ribrəl] 大脑的haemorrhage['heməridʒ] 脑溢血** caused by a blow on the head. 医生们猜测他死于脑溢血。
* **在/位于（领域，技术的）前沿cutting-edge**

1.N) If you are at the cutting edge of a particular field of activity, you are involved in its most important, most advanced, or most exciting development **[ at the cutting-edge of sth = at the forefront of that field 在/位于（领域，技术的）前沿 ]**

e.g. This **shipyard**造船厂 is **at the cutting edge/forefront of** world shipbuilding technology. 这家造船厂**位于<世界造船技术>的前沿**。

2.ADJ **[ cutting-edge techniques; cutting-edge equipment]** are the most advanced that there are in a particular field. **尖端/前沿的(技术，仪器)** V.S. **sophisticated equipment: 高精密的仪器**

e.g. What we are planning is **cutting-edge technology** never seen in Australia before. **尖端/前沿技术**

* think/imagine **out of the box**
* future, **futuristic** tech
* **visionary V.S. envision sth = envisage sth = imagine sth 设想／想想 xxx**
* visionary /ˈvɪʒənərɪ/

1.N  If you refer to sb. as **[ a visionary ]**, you mean that they have strong, original ideas about how things might be different **in the future**, especially about how things might be improved in future. 有远见的人  
e.g. An entrepreneur is more than just a risk taker. He is **a visionary.** 还是一个**有远见的人**。

2.ADJ You use visionary to describe the strong, original ideas of a visionary. 有创见/**远见**的 e.g. ...the **visionary architecture** of Etienne Boullée. …艾蒂安·布雷设计的 **创见性建筑**



* envision /ɪnˈvɪʒən/ **[ envision sth = envisage sth = imagine sth 设想 ]**   
  e.g. In future, we **envision**/**envisage**/**imagine** a federation of companies. **设想** 将来会有公司联盟。   
  E.g. Alana never **envisioned** her college career ending like this. 从未想到她的大学生涯会如此结束。
* envisage /ɪnˈvɪzɪdʒ/ **[ envisage sth = envision sth or imagine sth 设想** ] If you envisage something, you imagine that it is true, real, or likely to happen.   
  e.g. He **envisages**/**envisions** the possibility of establishing direct diplomatic relations with DPRK in the future. 他 **设想** 将来和DPRK 建立直接外交关系的可能性
* 造船厂 shipyard  
  e.g. This **shipyard** is **at the cutting edge/forefront of** world shipbuilding technology. 这家造船厂 **位于<世界造船技术>的前沿**。
* (假想的)火星人 Mars, Martian /ˈmɑːʃən/: A Martian is an imaginary creature from the planet Mars.   
  e.g. The **Science fiction (sci-fi)** describes that U.S. is being invaded by **Martians**. 正遭到 火星人 的入侵。  
  e.g. ADJ Something that is Martian exists on or relates to the planet Mars. 火星的 e.g. The **Martian atmosphere** contains only tiny amounts of water. 火星的大气层只含有微量的水
* rational => rationalist /ˈræʃə**nə**lɪst/

Someone who interprets information in terms of reason or logic is rationalist

1.ADJ If you describe someone as rationalist, you mean that their beliefs are based on reason and logic rather than emotion or religion. (人) 理性主义的; 唯理论的

e.g. White was both **visionary** and rationalist. 怀特既 **有远见** 又有理性。

2.N If you describe someone as a rationalist, you mean that they base their life on rationalist beliefs. 理性主义者 e.g. the rationalists and scientists of the nineteenth century. 理性主义者和科学家们。

* **Get real! [俚语]现实点，别幻想了 => “For real!” 要讲实话哦**e.g. Hey, zhangcong, I just wanna give your husband **a piece of my mind(一点想法)** : “We can't always **have our head in the cloud好高骛 远,** we need to **keep our feet on the groun/get both feet planted on terra firma脚踏实地**. It’s time to **get back to basics (返璞归真)** and be **a down-to-earth person(做一个脚踏实地的人).** **Just get real! 现实点吧**
* **It's time to get back to basics（返璞归真）** and stop being so greedy.   
  e.g. Hey, zhangcong, I just wanna give your husband **a piece of my mind(一点想法)** : “We can't always **have our head in the cloud好高骛 远,** we need to **keep our feet on the ground/get both feet planted on terra firma脚踏实地**. Let’s **get back to basics (返璞归真)** and be **a down-to-earth person(做一个脚踏实地的人).** **Just get real! 现实点吧**
* 轻信的容易受骗上当的(人) gullible /ˈɡʌləbəl/,轻信 gullibility

1.ADJ If you describe someone as **gullible**, you mean they are easily tricked or deceived because they are too trusting. 轻信的 e.g. What point is there in admitting that the stories fed to **the gullible public** were false? 承认向 轻信的公众 提供的报道不实又有什么意义呢？   
e.g. You think I’m such **a gullible person**? 认为我是一个　轻信的容易受骗上当的(人)吗？

* 2.N 轻信 gullibility e.g. Was she taking part of the blame for her own **gullibility**? 她因为自己的轻信而承担部分责任了吗？

**3.** [**gull**](javascript:void(0);)**[鸟] 鸥；笨人 silly and stupid person because too young易受骗之人, gullible,** [**gullibility**](javascript:void(0);)**轻信,易受骗**

e.g. Judging by the increasing number of people who are consulting **charlatans**冒充内行者 like Mystic Maureen (your resident so-called psychic), avidly reading their **horoscopes** on my morning commute, I'd say that **the future is bound to be bleak**. I thought we lived in an age of reason, but columns like this are sure to have **gullible people** believing otherwise. I'm no **soothsayer占卜/预言家/seer** or **shaman/ˈʃæmən/ 萨满法师**, and I don't claim to have **extrasensory perception**超感觉认识的, just good, old-fashioned **common sense**. I say, let's **get real** . But one thing I can predict for sure: I won't buy this newspaper again!

## Stop) Lexical resource “星相，占卜，预测“

* **see => seer /sɪə/ = seir = soothsayer**
  + seer : A seer is a person who tells/predicts people what will happen in the future. 预言者/先知

e.g. .the writings of the 16th century French seer, Nostradamus. ...16世纪法国预言家诺斯特拉达穆斯的作品。

* + seir   n. 预言家；先知者
  + soothsayer /ˈsuːθˌseɪə/ 占卜/预言In former times, **soothsayers** were people who believed they could see into the future and say what was going to happen.
* charlatan /ˈʃɑːlətən/ 1 假行家;冒充行家/专家; 2 **神算子/(算未来的）占卜家;**  3江湖医生

1.N)  You describe sb. as a **charlatan** when they pretend to have skills or knowledge that they do not really possess. 假行家;冒充行家/专家 e.g. I'd like to find the **charlatans** and give them **a piece of my mind (一点点想法)**

2. Sb. who falsely claims to be able to see the future is a charlatan **神算子;（算未来的）占卜家**. **[ charlatan = seer先知者, soothsayer['suːθseɪə]占卜/预言家 or shaman/ˈʃæmən/ 萨满法师/巫师 ]**

3. **a charlatan = a quack 江湖医生, charlatanism**['ʃɑrlətən,ɪzəm]**庸医之行为; 诈骗行为**

E.g. You’re such **a charlatan or fraudster! 你真是 一个骗子/忽悠人的人**e.g. Judging by the increasing number of people who are consulting **charlatans** like Mystic Maureen (your resident so-called psychic), reading their **horoscopes** on my morning commute, I'd say that **the future is bound to be bleak** . I thought we lived in an age of reason, but columns like this are sure to have **gullible/ˈɡʌləbəl/ 轻信的易受骗的people** believing otherwise. I'm no **soothsayer/seir/seer** or **shaman/ˈʃæmən/ 萨满法师**, and I don't claim to have **extrasensory perception超感觉认识**, just good, old-fashioned common sense. I say, let's **get real** . But one thing I can predict for sure: I won't buy this newspaper again!

* shaman /ˈʃæmən/ 萨满教法师 ; [shamanism](javascript:void(0);) 萨满教；黄教[shamanist](javascript:void(0);) 黄教徒；萨满教徒

1.N  A shaman is a priest or priestess in shamanism. 萨满教法师

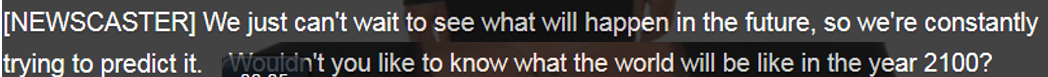
2.N  Among some Native American peoples, a shaman is a person who is believed to have powers to heal sick people or to remove evil spirits from them. 萨满; 美洲土著居民认为能祛病降魔的人

* **extrasensory** /ˌɛkstrəˈsɛnsərɪ/ **[ extrasensory perception 超感觉认识 ]**  
  e.g. Judging by the increasing number of people who are consulting **charlatans** like Mystic Maureen (your resident so-called psychic), reading their **horoscopes** on my morning commute, I'd say that **the future is bound to be bleak** . I thought we lived in an age of reason, but columns like this are sure to have **gullible/ˈɡʌləbəl/ 轻信的易受骗的people** believing otherwise. I'm no **soothsayer/seir/seer** or **shaman/ˈʃæmən/ 萨满法师**, and I don't claim to have **extrasensory perception超感觉认识**, just good, old-fashioned common sense. I say, let's **get real** . But one thing I can predict for sure: I won't buy this newspaper again!
* astronomer V.S. astrology V.S. astronaut
* astronomy 天文学=> astronomer /əˈstrɒnəmə/   N  An astronomer is a scientist who studies the stars, planets, and other natural objects in space. 天文学家
* astronaut /ˈæstrəˌnɔːt/: a person who is trained for travelling in a spacecraft. 宇航员 **[ spacesuit ]**
* astrology 占星学 /əˈstrɒlədʒɪ/ => astrologer/astrologist 占星家
  + Astrology is the study of **the movements of the planets, sun, moon, and stars** in the belief that these movements can have an influence on people's lives. 占星
  + **astrologer or astrologist /əˈstrɒlədʒə/**  An astrologer/astrologist  is a person who uses astrology to try to tell you things about your character and your future. 占星家
* 占星, **占卜,** 占星术

|  |  |
| --- | --- |
| astrology 占星学 /əˈstrɒlədʒɪ/ => astrologer/astrologist 占星家 | * + Astrology is the study of **the movements of the planets, sun, moon, and stars in the belief that these movements can have an influence on people's lives.** 占星   + **astrologer or astrologist /əˈstrɒlədʒə/**  An astrologer/astrologist  is a person who uses astrology to try to tell you things about your character and your future. 占星家/占卜者 |
| **Nostradamus**占星家/占卜者**[,nɔstrə'dəməs; -'dɑ:-]** | French **astrologer/astrologist** who wrote cryptic predictions whose interpretations are still being debated (1503-1566) |
| horoscope /ˈhɒrəˌskəʊp/ 占星术 (根据星象算命)占星；十二宫图 | Your horoscope is a prediction of events which some people (we call “a seer/seir/soothsayer”) believe will happen to you in the future. Horoscopes are based on the position of the stars when you were born.  e.g. I always read my horoscope and follow the advice. 我总是查我的星象，然后依照其建议行事。 |

## Done mp3Video) Visionary for futuristic tech

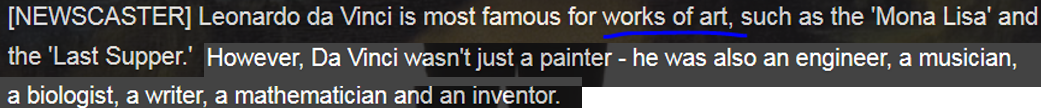


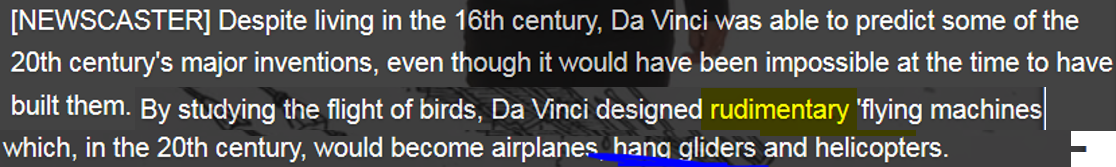




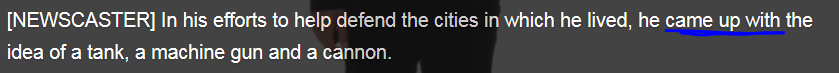
Who know. But it’s fun to imagine/**envision**.

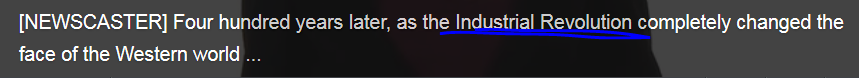


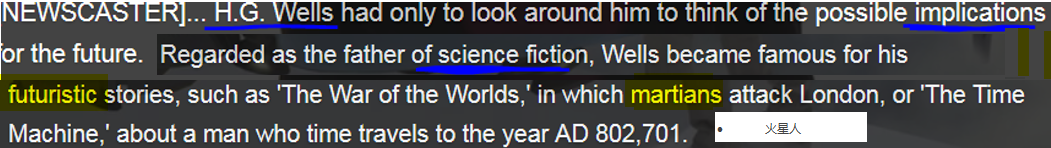


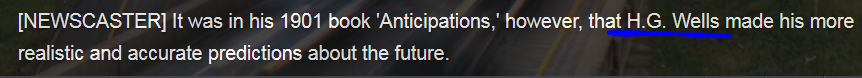


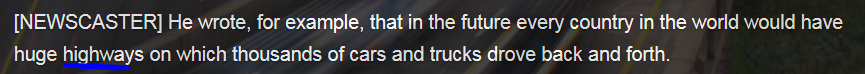
1. rudiment, rudimentary: 雏形的



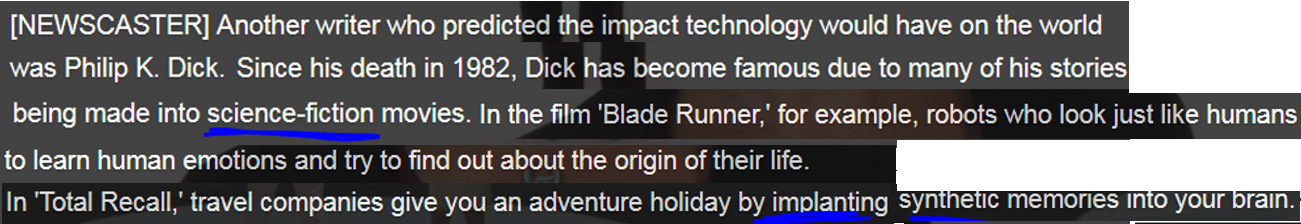






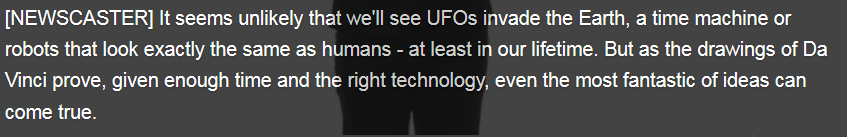






**Synthetic** products are made from chemicals or artificial substances rather than from natural ones. 合成的





## Reading) Seer/seir预言者 or charlatan/ˈʃɑːlətən/假行家

Some look to the stars to spot signs of life on other planets. Others look for signs of a different kind, to the **omens** and **portents** they hope will **foretell** of riches a-waiting, relationships a-coming and fame a-calling. Some look upward to the heavens for such signs; others, inward to visions and inspiration. And the rest of us may look downward at more humble and homely **teacups**, **tarot cards** and **talismans** to find what the future might hold in store.

**By no means** a 21st-century phenomenon, means of **divining** the future have long been part of traditional cultures around the world. People have **scoured** their dreams for symbols that might unlock what’s around the corner. Some societies have looked to Mother Nature for guidance, reading the **entrails** of animals or the shapes formed by clouds, shadows cast by stones or **yarrow stalks**, or scanned **upturned** palms and faces. These forms of **divination** have often been associated with people believed, or who believe themselves, to have special gifts of **extrasensory** perception, or **second sight**. The role of the priest or priestess, **shaman** or magician is still central in many societies today, though their responsibilities may now also include here-and-now concerns as well as **forebodings**.

Throughout history, particular people have been associated with **clairvoyant** or **clairaudient** abilities. For the **rationalists**, these people are no more than **charlatans** who offer vague and cryptic messages, veiled in **metaphor** and imagery, open to variable interpretations. To those who feel there is more to this world than the physical eyes can show us, such messengers hold the key to unlocking the future **trajectory** of our world, and offer hope of **averting** dangers yet to come.

One such individual is Nostradamus. Controversy and criticism surround what is known of him. Born Michel de Nostredame in France in the early 16th century, he Latinized his name to Nostradamus for personal reasons. Often depicted as a physician, some historians claim he was thrown out of medical university. On one thing most would agree, however: Nostradamus was an astrologer, looking to the movement of the planets and people’s times of birth to draw up his prognostications. But he has perhaps gained most notoriety not for his glimpses into personal lives, but for his revelations about the future through quatrains, or verse-like commentary.

Attributed to Nostradamus with the benefit of what naysayers call retrospective hindsight are prophesies of world wars, numerous famines and disasters, man’s landing on the moon and the recent collapse of world economies. For non-believers, however, these verses are no more than the ramblings of a man deluded, and the application of creative interpretation on the part of those who wish to believe in Nostradamus’ clairvoyance. Linguists argue his messages were wrapped in such obscurity and metaphorical language that the doors of perception were left wide open for the public to make of them what they would. They point to the wealth of phrases such as ‘and the young lion shall overcome the old’ as his means to figuratively (and some would say, therefore, evasively) refer to a wide spread of people and nations. But when the times get tough and bad things happen to good people, many look to Nostradamus’ writings, imagining they foretold this writing on the wall and heralded apocalyptic news.

How did Nostradamus make these predictions supposedly ranging from technological advances to world destruction? Reportedly, he stared into water or fire to see these visions, though more extreme believers claim the man was a time traveler! Perhaps there is only one thing we can be truly certain of, however: The debate about the meaning of Nostradamus’ work will continue for as long we have a future!

## 2nd row**) Speculating/Conjecture推测/猜想** about the future

Use expressions like these to speculate/conjecture about the future.

* Our greed may **slap us in the face**.
* Our misuse of natural resources will **come back to haunt us**.
* If you believe my horoscope, next week is **bound to be bleak**.
* I don't **foresee myself** making any big changes.
* **By no stretch of the imagination** should we worry about **the world coming to an end**. //reverse：倒装, see “should”

Use expressions like these to advise **a rational approach**. Be careful; these expressions can be quite strong.

* Use your **common sense.**
* **Get real. [俚语]现实点吧，别幻想了**
* It's time to **get back to basics（返璞归真）** and stop being so greedy.
* I'd like to find the charlatans and give them **a piece of my mind (一点点想法)**

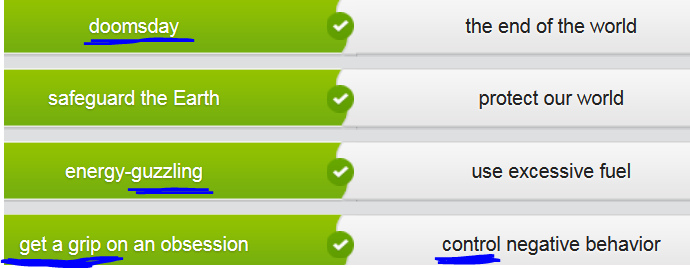
|  |
| --- |
|  |

## Reading) Let’s get real! 现实点吧

For some of us, the future is here already. It's encoded in our individual DNA. It's carried in the words we speak that are highly/most likely to **come back to haunt us**, and it's going to **slap us in the face** in no uncertain terms when Mother Nature finally decides to give us one final **piece of her mind** .

Judging by the increasing number of people who are consulting **charlatans** like Mystic Maureen (your resident so-called psychic), avidly reading their **horoscopes** on my morning commute, I'd say that **the future is bound to be bleak** . I thought we lived in an age of reason, but columns like this are sure to have **gullible/ˈɡʌləbəl/ 轻信的易受骗的people** believing otherwise. I'm no **soothsayer占卜/预言家/seer** or **shaman/ˈʃæmən/ 萨满法师**, and I don't claim to have **extrasensory perception**超感觉认识的, just good, old-fashioned **common sense** . I say, let's **get real** . But one thing I can predict for sure: I won't buy this newspaper again!

## 3rd row) Predictions and predicaments/plight/troublesome situation



They're working to help address doomsday predictions.

It's important to help safeguard the planet.

It's an alternative to **energy-guzzling** transportation.

Do you think we can avoid the end of the world?

We should **get a grip on (control)** our obsession痴迷 and greed with money.

Q:  I’ve never heard of YADS-MOOD. What is it exactly?  
A:  It’s a movement dedicated to encouraging individuals to protect the Earth’s diminishing resources or endangered species, and look for more viable, earth-sustainable **alternatives** in every aspect of life. Its name is made up of the letters of the word ‘doomsday’ spelled backward. So we’re all about trying to reverse the doomsday predictions in various areas of life.

Q: Cool! And which areas are those?  
A: The economy, the environment, technology and society.

Q: And what’s the message that you’re trying to get across to people?  
A: Good question. **First and foremost,** act now. **Carpe diem** – seize the day, and all that. Before it’s too late. Whether you read **tarot cards**, follow the writings of **Nostradamus**[,nɔstrə'dəməs **]/astrologer/astrologist** or listen to the scientific community, all the signs are there, and they are pointing in the same direction: doomsday, unless we act. Now.

//Carpe diem: enjoy the pleasures **of the moment**, without concern for the future 及时行乐 V.S. hedonist: 享乐主义者

Q: What do you predict will happen if we don’t?  
A: Well, as far as the economy’s concerned, unless we **get/tighten a grip on/control** our obsession with acquiring things, people will likely keep on **the debt treadmill** and economies will take a nosedive. Consumer debt on a personal level and **toxic assets** on a company level are bound to continue to increase. We’ve come close a number of times over the years to a global **economic meltdown/recession.** Then there’s the environment. People have been talking about this for hundreds of years, not just in my lifetime. We have to look at **sustainable ways of living**, **mothballing**/stop our greedy need for **energy-guzzling** modes of transportation and habitats. We may have got to make some very tough choices in the years ahead, but at least we still have time to make the choices. **//energy-guzzling V.S. energy-efficient**

Q: So you remain **optimistic** **in spite of** all the **doomsday** warnings we’ve heard?  
A: Oh, yes, I think so. We think it’s possible to make use of technology in such a way so as to **safeguard the Earth** rather than destroy it. If we could apply all the money that’s gone into developing **frivolous** inventions into more life-sustaining projects like the one called Eat Local Reduce Air Miles, then everyone would benefit. We may not be traveling to the moon or other planets anymore in the future, but at least we’d be looking after the one we’re on now.

//**frivolous expenses**, such as buying coffee in the morning: 无用的浪费的(开销)

Q: So what can people do on a day-to-day basis?  
A: Start small. We can’t just all drop everything and go run off into caves, or **beat a hasty retreat** to some **idyllic [aɪ'dɪlɪk] island** somewhere. But we can turn off lights or change our light bulbs into the **energy-efficient bulbs**, turn down air conditioners, go back to growing our own food. Why, even just the other day, I came across a really neat city garden right in the heart of our heaving **metropolis**[mə'trɑpəlɪs] here. It’s **a densely populated area** with **innumerable/infinite无数的，数不清的** high-rises, but there they were – 10 tiny little plots with people growing cucumbers, lettuce and fresh flowers. It made my heart sing!

//metropolis 大都市(e.g. xi’an) V.S. cosmopolis [kɑz'mɑpəlɪs] 国际都市(指居民中有许多不同国籍的人）

Q: Well, that sounds like a good note on which to end our interview. Thanks for your time, and good luck!

## done mp3) 4th row) Predicting the future

You're talking to a friend who always has strong ideas about the future. This time, he's making **predictions** about environmental problems and solutions (so he’s a **seer/seir/soothsayer**) . He then asks for your predictions about future problems and solutions.

# Part 2) Discussing a new tech

## 1st row) Expressing doubt and scepticism/scepticism

## Stop) Lexical resources

Star Trek星际迷航（电影名（科幻电视剧名 sci-fi）

soya  [报错](javascript:void(0);)

 英 ['sɒɪə]  美 ['sɔɪə] [跟读](javascript:void(0)) 口语练习

n. 大豆，[作物] 黄豆

* warp /wɔːp/; warping 翘曲变形的;

1.V (尤指因受潮湿气、受热而) 翘曲变形 If sth warps or is warped, it becomes damaged by bending or curving, often because of the effect of heat or humidity.

e.g. Left out in the heat of the sun, tapes easily warp in their cases. 放在太阳底下晒后，磁带易 翘曲变形。

2. warp = 曲解 = distort

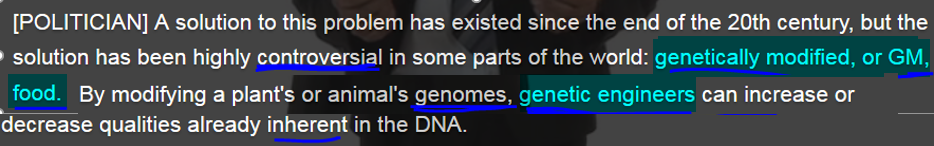
3. **[ “warp drive” : a device that is envisioned/envisage/imagined设想 to allow a spaceship to move faster than the speed of light. ]** e.g **Cosmic wormholes宇宙虫洞** might open a doorway to the other side of the galaxy, but scientists continue to **ponder/ruminate 考虑** the rich possibilities of another loophole in relativity: the **warp drive.**  宇宙虫洞也许能提供一种到达星系另一侧的途径，但科学家仍然在考虑另一种更靠谱的相对论漏洞：翘曲航行

* Harry Potter  哈利·波特（
* cloak /kləʊk/
* 1. A cloak is a long, loose, sleeveless piece of clothing which people used to wear to cover their other clothes when they went out. (无袖的)斗篷
* 2. A cloak of something such as mist, fog, smog, or snow completely covers and hides something. 在(雾雪, smog)的笼罩中, 笼罩在(雾雪, smog)中 [ a mantle of something is a layer of it covering a surface, for example a layer of snow on the ground. 覆盖物; 幕罩   
  a mantle of snow/ice 薄薄的一层   
  under a cloak/mantle of heavy smog; under a cloak/mantle of heavy fog/mist  
  a film of (oil) = a thin layer of this thing 薄薄的一层 , e.g. The ocean is coated with a film of disgusting/sickening sewage and oil. e.g. The countertop is coated with a film of flour 厨房的面台上覆了一层薄薄的面粉.  
  a blanket of snow/ice = a thick layer of sth 厚厚 的一层 ] e.g. Because of serious air pollution, xi'an is under a cloak/mantle of heavy smog, I have to buy an air purifier that can suck up the dirty air to some degree //suck up sth (抽油烟机）抽 (液体、气体). e.g. Today most of New England will be under a cloak/mantle of thick mist. 在浓雾的笼罩中. e.g. During winder, the whole North of China is completely under a cloak/mantle of hazy smog 笼罩在雾霾下.   
  e.g. This week, the whole city is under a cloak/mantle of heavy hazy smog. Due to the hazy smog, construction and demolition work were banned for the being time, the Delhi mayor announced emergency measures to protect the public from the terrible air pollution. He cautioned that a limitation policy of odd-even rationing for vehicles should be implemented if the situation does not improve. The policy means that cars would only be allowed to operate on alternating days交替 depending on their license plate numbers. What is more, you must affix your parking sticker to the front of windscreen/windshield. //车牌号 the license plate number, 停车许可 parking permit; 停车证 parking sticker; 车尾贴 bumper sticker: affix the parking sticker to the windscreen/windshield.
* the cloak of invisibility?
* If you refer to something as **a cloak**, you mean that it is intended to hide the truth about something, esp. the disgusting/sickening things. (遮掩真相的)幌子 e.g. Do you really believe that the hazy smog is mainly caused by the car ejection/discharge 排出物? Well, I don't think so, to be honest, the car ejection is only a cloak(遮掩真相的)幌子 that is used to hide the truth about air pollution . The truth is that the goverment imported very cheap oil with poor quality from overseas, which generated harmful/detrimental particles....
* The cloakroom['kləukrum] at a public building such as a theatre, superstore, KTV, or club is sort of a cubicle格子间 where customers can leave their coats or bags, usually charged for a small fee. (指公共场所让顾客寄放的)衣帽间 ...a cloakroom attendant.…一名衣帽间服务员
* 长寿longevity /lɒnˈdʒɛ**və**tɪ/ is long life. 长寿

e.g. Human **longevity** runs in families. 人类 长寿 是有遗传的。  
e.g . Why did you want to do this massive study on **longevity**? 关于 长寿 做这么大的一个研究？  
e.g. Research shows that the **latitude** of your birthplace and how much solar radiation you were exposed to when in the **womb/uterus['jutərəs]** affects your **health and well-bing**, wealth, happiness, **longevity** and creativity.

* 转基因的 GM = genetically-modified**[ GM fruits; GM corns; GM wheats; GM food; genetically-modified plants = GM plants转基因植物; genetically-modified technology= GM tech 转基因技术; genetically-modified cells 转基因细胞 ] => genetic mutation: 基因突变**

**Genetically-modified plants and animals** have had one or more genes changed, for example so that they resist pests害虫 and diseases better. **Genetically-modified food** contains ingredients made from **genetically-modified plants or animals.** The abbreviation **GM** is often used.

e.g. Top supermarkets are to ban many **genetically-modified (GM) foods.** 禁止销售 **转基因的食品**e.g.

* 染色体组, 基因组 genome: **/ˈdʒiːnəʊm/**  => **genetic mutation: 基因突变**

 In biology, a genome is the particular number and arrangement of chromosomes within the cells of an organism such as an animal or plant that distinguishes it from other types of organism**. [ 人类基因组图谱/染色体组图谱: the mapping of the human genome ]**

* **viable /ˈvaɪəbəl/, 可行性 viability = feasible, feasibility**

1. Something that is viable is capable of doing what it is intended to do. 可行的 **[ 可行的方案 viable solution; 可行的方法viable method ]**

e.g. Cash alone will not make Eastern Europe's banks viable.   
e.g. Before **embarking on(start)**  this project, we must assess whether this is **a viable solution.**e.g Umm, not sure the **viability** of transforming markdown to dita?

* feasible /ˈfiːzəbəl/ = viable , feasibility = viability

1.ADJ If something is feasible, it can be done, made, or achieved. 可行的

e.g. She questioned whether it was **feasible** to stimulate investment in these regions. 是否可行。

e.g. The committee will study **the** **feasibility**/**viability** of setting up a national computer network.

研究<建立一个国家计算机网络>的可行性。

* 农药，杀虫剂  pest => pesticide; Pesticides are chemicals that farmers put on their crops to kill **pests (害虫)** or harmful insects**. [** [**pesticide residue**](javascript:void(0);)**[药]农药残留（量）;** [**chemical pesticide**](javascript:void(0);)**化学农药/杀虫剂 ]**
* 易受影响的 impressionable /ɪmˈprɛ**ʃənə**bəl/   
  Sb. who is impressionable, usually a young person, is not very critical or persistent坚持的 and is therefore easy to influence. **[ young and impressionable people 年轻的和易受影响的观众 ]**e.g. The law is intended to protect **young and impressionable audiences**. 年轻人和易受影响的观众
* 好高骛远 V.S. 脚踏实地
  + 好高骛远[ Have sb’s head in the cloud ] e.g. We can't always **have our head in the cloud**, we need to **be down-to-earth**/**keep our feet on the ground**. **Let’s get back to basics (返璞归真)** and **get real (现实点吧)!** 我们不能总是那么 好高骛远，我们要**脚踏实地**
  + **脚踏实地： Adj) [ adj] down-to-earth = keep your feet on the ground = get both feet planted on terra firma ]**
  + e.g. I’m such **a down-to-earth person 脚踏实地(的人)**

e.g. For each party member, it requires not only clarity of vision, but also **down-to-earth dedication (脚踏实地的奉献)**e.g. Hey, zhangcong, I just wanna give your husband **a piece of my mind(一点想法)** : “We can't always **have our head in the cloud好高骛 远,** we need to **keep our feet on the ground/get both feet planted on terra firma脚踏实地**. Let’s **get back to basics (返璞归真)** and be **a down-to-earth person(做一个脚踏实地的人).** Just **get real! 现实点吧**

* Get real! **现实点吧** V.S. For real ! 说实话哦
* a charlatan假行家 or a fraudster['frɔdstɚ]  忽悠人的（人）
  + charlatan /ˈʃɑːlətən/ 1 假行家;冒充行家/专家; 2 **神算子/(算未来的）占卜家;**  3江湖医生

1.N)  You describe sb. as a **charlatan** when they pretend to have skills or knowledge that they do not really possess. 假行家;冒充行家/专家 e.g. I'd like to find the **charlatans** and give them **a piece of my mind (一点点想法)**

2. **神算子;（算未来的）占卜家** Sb. who falsely claims to be able to see the future. **[ charlatan = seer先知者, soothsayer['suːθseɪə]占卜/预言家 or shaman/ˈʃæmən/ 萨满法师/巫师 ]**

3. **a charlatan = a quack [kwæk] (江湖医生, （鸭子）嘎嘎叫) charlatanism**['ʃɑrlətən,ɪzəm]**庸医之行为; 诈骗行为**

e.g. Judging by the increasing number of people who are consulting **charlatans** like Mystic Maureen (your resident so-called psychic), avidly reading their **horoscopes** on my morning commute, I'd say that **the future is bound to be bleak**. I thought we lived in an age of reason, but columns like this are sure to have **gullible/ˈɡʌləbəl/ 轻信的易受骗的people** believing otherwise. I'm no **soothsayer占卜/预言家/seer** or **shaman/ˈʃæmən/ 萨满法师**, and I don't claim to have **extrasensory perception**超感觉认识的, just good, old-fashioned **common sense**. I say, let's **get real**. But one thing I can predict for sure: I won't buy this newspaper again!

* + **忽悠人的（人）; 骗子 fraudster   ['frɔdstɚ] =  a swindler ['swɪndlɚ]**   
    [ business fraud/scam/shenanigan商业诈骗, fraudulent (marriage) 🡺 fraudster/swindler ]   
    e.g. The senior lady was **conned** in by a swindler**['swɪndlɚ]** /fraudster. 老人被骗子忽悠了。  
    eg. **You’re such a big fraudster! 你真是一个“大忽悠”**
* 科幻小说 sci-fi **['sai'fai]**

Your friend is a **science-fiction (sci-fi ['sai'fai])** fan and often makes crazy predictions and **envision/envisage sth** interesting about **future technology.** E.g. **Star Trek星际迷航（电影名（科幻电视剧名）**

## Stop) Lexical resources-Express doubt or skepticism

* somewhat = a little bit

e.g. 我有 **一点** 怀疑 I’m **somewhat/a little** skeptical (about it) => “somewhat” is also to **soften your tone of voice and save others’ face.**

V.S. 我 **十分/非常** 怀疑I'm **utterly** skeptical about that. = I doubt that very much.

* I doubt that **very much/utterly.** = I **cast a strong doubt on sth**
* O**[n e]**arth **[用于疑问词后加强语气]究竟，到底怎么**

e.g**. (那个）和那个东西(it) 究竟 有毛线关系, 表示强烈的怀疑(utter doubt and skepticism)**  How **[on earth]** could that **have anything to do with** it?   
e.g. 那个 **到底怎么** 会是真的呢？ How **[on earth]** could that be true?

e.g. How **[on earth]** do you think that’s **ever** going to happen? **//ever: (intensifier for adjectives) very**  
e.g. Why **[on earth]** do you doubt that? 你 **究竟到底** 为什么怀疑那个啊？

* **ever: (intensifier for adjectives) very**   
  e.g. Like that's **ever** gonna happen! 好像那个 **真的(ever)** 会发生哦 **//be gonna do sth** = be going to do  
  e.g. It seems that that’s ever **gonna** happen! //”like” and “it seems that” are used **for softening  ['sɔfn] your tone of voice**
* No way!
* What’s that got to do with it?

## done mp3) Doubt and skepticism

## 2nd row) Express a conviction/firm strong belief; 判刑

## Stop) Lexical resource-Express a conviction/strong belief or opinion

* convict [kən'vɪkt]: V) If someone **is convicted of a crime**, they are found guilty of that crime in a court of law. 证明…有罪
* conviction /kənˈvɪkʃən/

1. A conviction is a strong belief or opinion 坚定的信念 **[ 我们坚信 xxx: It’s our firm conviction that xx]**  
e.g. **It is our firm conviction that** a step forward has been taken. 我们坚信 已经向前迈进了一步。  
e.g. "We shall, sir," said Tracy, **with firm conviction**. 索恩 坚定地说：“先生，我们会的”

|  |
| --- |
| How to express a conviction/strong belief or opinion:   * **我坚定地相信 It’s my fervent ['fɝvənt] belief that = It’s my firm conviction that xxx** * **I'm totally convinced that** we're going to run out of oil. * He talks with **utter conviction** about living to 150, such a **longevity** 完全坚定的信念 * He said it with **utter conviction that xxx** ….. 坚定的说xxx * **With every fiber of my being(完全相信), I believe** in peace. * **Without a shadow of a doubt**. 毫不怀疑，坚定的相信 * **There is not a dout in my mind** |
| V.S. to express your doubt:   * I have some doubts that xxx * I **cast a doubt on sth** * I’m **somewhat**(a little) sceptical about that * ***I* *am* *in* *two* *minds* about** sth xxx. On one hand, xxx; on the other hand, xx   V.S.   * I have **two cents** abouts = I have some opinion or comment about sht |

2.N If sb. has a conviction, they have been found guilty of a crime in a court of law, **be convicted of a crime**判罪 e.g. He will **appea[l a]**gainst his **conviction**. 他将对他的判罪/判决进行**上诉**。

* 我完全坚定地相信… **With every fiber of my being, I believe xxx .**

e.g. (Applause.) **With every fiber of my being, I believe** that we -- as Americans -- can still come together behind a common purpose.  **我完全相信**，我们——作为美国人。

* Say sth **[ with utter conviction**], talk sth **with utter conviction**

e.g. He talks **with utter conviction** about living to 150. 他 完全坚定的 说xxx/ 坚信的说

e.g. He said it **with utter conviction that xxx** …..

* fervent /ˈfɜːvənt/ fervently

1.ADJ A fervent person has or shows strong feelings about something, and is very sincere and enthusiastic about it. 热情的; 热诚的 e.g. ...a fervent admirer of Morisot's work. xxx的热诚崇拜者。

**2. [ 我坚定地相信 It’s my fervent ['fɝvənt] belief that xxx = It’s my firm conviction that ]**

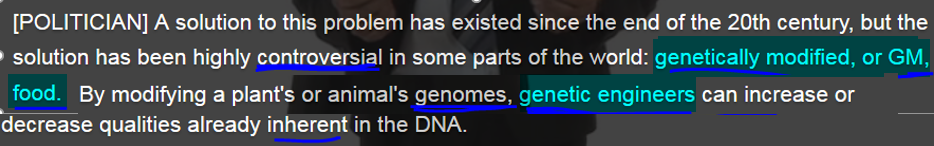
e.g. **It’s my fervent belief/firm conviction that** this **envisioned** idea will happen in the next 10 yrs.

e.g. **It's my fervent belief/firm conviction that** we'll live on the moon someday.

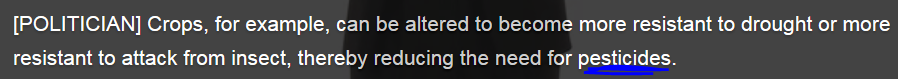
* Do you believe that will happen in future? “**Without a shadow of a doubt**” 毫不怀疑，坚定的相信

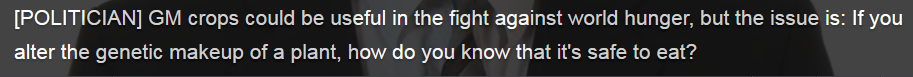
## done mp3) GM food (genetically-modified)





genome: 



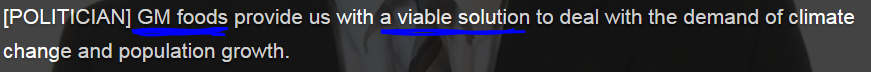












## done mp3)

## 3rd row) Science-fiction TV program – Star trek

Listen to the conversation about a popular **sci-fi** TV program. // ['sai'fai] 科幻小说（等于science fiction）, e.g**. Star Trek星际迷航（电影名（科幻电视剧名）**

## done mp3) Star Trek星际迷航（电影名（科幻电视剧名）

## 4th row) Discussing a new tech

## Done mp3)

Your friend is a **science-fiction (sci-fi ['sai'fai], e.g Star Trek星际迷航（电影名（科幻电视剧名）) fan** and often makes crazy predictions and **envision/envisage sth** interesting about **future technology.**

Express **doubts** about his ideas, but choose the most polite objection each time.

# Part 3)

## Stop) Lexical resource

* 巴结讨好/对…说好话; 阿谀奉承; **拍我马屁**  **butte[r u]p sb. = butter sb. up =** [**pay a compliment to**](javascript:void(0);) **sb = flatter sb= kiss sb’s ass** v. butter sb. up = flatter with the intention of getting something valuable

e.g He bought two expensive vases to**butte[r u]p** her parents.  要 **讨好** 她爸妈。

e.g I know he's trying to **butter me up/flatter me** but **I don’t buy it.**  他想要 **拍我马屁**，但 我**才不吃那一套**。

e.g He began to **butte[r u]p the boss** in hope of being given a better job .  **巴结** 老板, **拍**老板**马屁**

=> **马屁精 ass-kisser, apple-polisher**

|  |  |
| --- | --- |
| 1. xxx的手感, xxx xxx的手感, 质地质感; xxx的口感 2. (尤指食品、土壤等的) 结构,比如 是组织松,气孔多;或者是重,硬 | texture /ˈtɛkstʃə/  1. **The texture of sth** is the way that it feels **when you touch it or taste it**, for example, how smooth or rough it is. xxx的手感, 质地质感; xxx的口感 **[ 真丝的手感/质地/质感 a silky texture; 拿铁的口感 the texture of Latte** **['lɑːteɪ; 'læteɪ]; 有嚼劲的口感 chewy texture ]**  e.g. How do you feel **the texture of this Latte** **['lɑːteɪ; 'læteɪ]?** 你觉得这个 **拿铁的口感** 如何? Well, **bittersweet (经历)苦乐参半的; (味道)又苦又甜的**.  e.g. This cloth has **a silky texture**. 这种布具有真丝的手感/质感  e.g. Bagel is a ring-shaped roll with a tough, chewy texture (有嚼劲的口感/质感）, made from plain **yeast[jiːst]酵母dough /dəʊ/生面团** that is dropped briefly into nearly boiling water and then baked.  // yeast is a kind of **fungus真菌** which is used to make dough**/dəʊ/生面团** **fermented发酵 and then swollen,** and in making **alcoholic[ælkə'hɒlɪk**] drinks such as beer. |
| 2. The texture of sth, especially food or soil, is its structure, for example, whether it is light with lots of holes (组织松,气孔多)， or very heavy and solid. (尤指食品、土壤等的) 结构, 比如 是组织松,气孔多; 或者是重,硬　　 e.g. Matured over 18 months, this cheese has an open, crumbly **texture** (松脆的组织结构) with a strong flavour. |
| 纺织品; 纺织业 | textile /ˈtɛkstaɪl/  1. Textiles are types of cloth or fabric, especially ones that have been **woven or knit** 纺织品 e.g. ...decorative textiles for the household. …家用的装饰性 (针织, 编织的) 纺织品。  2. Textiles are the industries concerned with the manufacture of cloth. 纺织业  e.g. Another 75,000 jobs will be lost in **textiles 纺织业** and clothing **with the burgeoning advent of(随着xxx的出现)**  **humanoid robots  ['hjʊmə'nɔɪd] ['rəʊbɒt]** |

* penal  ['pi:nl]; penalty ['pɛnəlti]; penalize sb /ˈp**iːnə**ˌlaɪz/
  + penal **/ˈpiːnəl**/:  means relating to the punishment of criminals. 有关刑罚的 [ penal and legal systems 刑罚与法律体系 ]
  + penalize sb/ˈpiːnəˌlaɪz/ : 1.V-T If a person or group is penalized/ˈpiːnəˌlaɪz/  for something, they are made to suffer in some way because of it. 处罚sb. e.g. Some of the players may, on occasion, break the rules and be penalized/ˈpiːnəˌlaɪz/ . 并受到处罚。 Eg. On Thursday, Trump announced new US **sanctions制裁** to [**penalize/ˈpiːnəˌlaɪz/ 处罚** any company or person doing business with North Korea](http://money.cnn.com/2017/09/21/news/economy/us-north-korea-sanctions-explainer/index.html) by either cutting off their access to the US financial system or freezing their assets -- or potentially both.

# ==STOP HERE

* 可疑的; 不太可靠的/不可信的 dubious /ˈdjuːbɪəs/  ['djuːbɪəs]; [dubiously](javascript:void(0);) 怀疑地；可疑地; [dubitable](javascript:void(0);) 可疑的；不确定的; [dubiously](javascript:void(0);) 怀疑地；可疑地 [dubiety](javascript:void(0);) 可疑的东西；可疑性

1.ADJ If you describe something as dubious, you mean that you do not consider it to be completely honest, safe, or reliable. 可疑的; 不太可靠的 e.g. This claim seems to us to be rather dubious.

这项声明在我们看来相当 不可信。

2.ADV 可疑地; 不太可靠地 dubiously e.g. Carter was dubiously convicted of shooting three white men in a bar. 卡特很有嫌疑地被宣叛在一家酒吧射杀了3名白人。

3.ADJ If you are dubious about something, you are not completely sure about it and have not yet made up your mind about it. 有疑虑的 e.g. My parents were a bit dubious about it all at first but we soon convinced them.

起初我父母亲对此尚心存疑虑，但很快我们便说服了他们。

* Infancy

e.g. Robots can't do much because the technology is still in its \_ Infancy

* LGBT: LGBT is an initialism that stands for lesbian, gay, bisexual, and **transgender**.
* curator

sb who manages or oversees (inspect, monitors and supervises), as the administrative director of a museum collection, gallery collection, school, or a library. (博物馆、图书馆等的)馆长; 保管员; [英](大学)学监; (校董事会中的)财务保管员; (公共艺术收藏机构的)管理人

(未成年者等的)保护人, 监护人 curator=custody; In CHINA, the years of discretion法定年龄 is 18. Before that, normally parents are your legal curators/custody监护人 eg After his parents' divorce, his mother got his curator/custody right. //discretion: If someone in a position of authority uses their discretion or has the discretion to do something in a particular situation, they have the freedom and authority to decide what to do. 酌情决定权 e.g. This committee may want to exercise its discretion to look into those charges. 这个委员会可能想行使其酌情决定权来调查那些指控

//oversee, oversaw, overseen; oversight = negligence疏忽 The exhibition is aimed at promoting a better understanding of the LGBTQ experience in Asia, according to **curator**博物馆、美术馆的) 馆长 Sean Hu. "The works relates to issues facing the Chinese LGBTQ community and our life stories," he said in a phone interview. "It symbolizes **a slice of our history**.

"We hope the exhibition **has a ripple effect涟漪效应** across Asian society, and leads to people respecting different sexual orientations," said Hu, who is also an activist for LGBTQ and **ethnic minority** issues in Taiwan.

* gizmo /ˈɡɪzməʊ/: A gizmo is a device or small machine that performs a particular task, usually in a new and efficient way. People often use gizmo to refer to a device or machine when they do not know what it is really called. 新玩意儿; 小物件 **[ 时髦的玩意儿a funky gizmo ]**

e..g ..**a plastic gizmo (塑料玩意)** for holding a coffee cup on the dashboard

* rotten job

e.g. Why do robots take out the trash? Because it's a \_rotten job!

* funky  时髦的；恶臭的 (stinky)   
  [ funky wearable device时髦的可穿戴产品; a funky gizmo /ˈɡɪzməʊ/ 时髦的玩意儿 ]
* **[ in a way ] 在某种程度上；有点儿** = to some degree, a little bit  
  e.g. We're **playing with fire/taking risks**, **i[n a] way(**在某种程度上；有点) and we **might** get burned.
* **(陪审团还在外面)还没有定论 ; 最后结论还有待分晓 [ The jury's still out. The jury's still out on sth关于笑嘻嘻事，还没有定论 ]  
  e.g.** Seems interesting to me, but **the jury's still out.**
* We need more research, **in my humble opinion**  **依我个人拙见愚见.**
* **With respect; With all my respect, Sir. = No offense, sir** 毫无冒犯之意，恕我直言

e.g. AVA: **The jury's still out on** genetic modification(GM), isn't it? **(关于转基因这个事，还没有定论)** **Seems to me (to soften your tone of voice)** it's a rather risky business all round. Besides, **GM's** just way too expensive, to my way of thinking. And a lot of researchers are unhappy about the consequences, either.

JEFF**: With respect/No offense (毫无冒犯之，恕我直言),** I don't think that you have all the facts at your disposal.

|  |  |
| --- | --- |
| * Use expressions like these to **soften an opinion or statement, avoiding harsh directness**. | |
|  |  |

|  |  |
| --- | --- |
|  | He **has a tendency to** argue with everyone. 他好像要 xxx |
|  |  |

|  |  |
| --- | --- |
|  | **It seems to me** that the process is quite risky. |
|  |  |

|  |  |
| --- | --- |
|  | **With respect/No offense(毫无冒犯之意，恕我直言),** you don't have all the facts. |
|  |  |

|  |  |
| --- | --- |
|  | We're **playing with fire/taking risks**, **i[n a] way(**在某种程度上；有点) and we **might** get burned. |
|  |  |

|  |  |
| --- | --- |
|  | We need more research, **in my humble opinion依我个人拙见/愚见**. |
|  |  |

|  |  |
| --- | --- |
|  | It's the most expensive project **ever**, **if I'm not mistaken**. |
|  |  |

|  |  |
| --- | --- |
|  | Sounds interesting to me, but **the jury's still out (还没有定论 ; 最后结论还有待分晓).** |

## 1st) row The mind of machine (AI, machine learning)

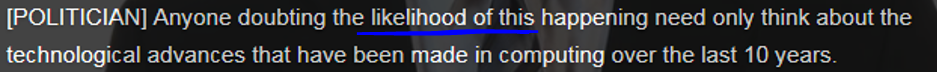
## done mp3) Video: The mind of the machines

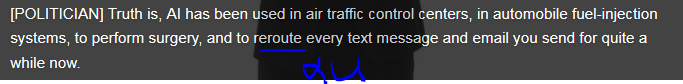












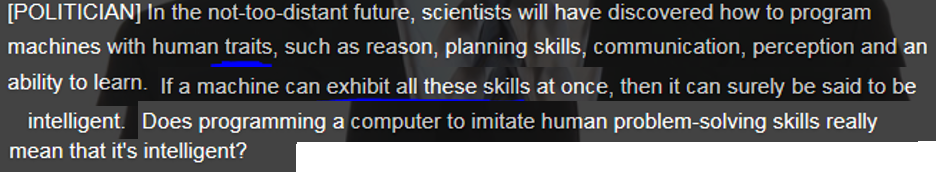














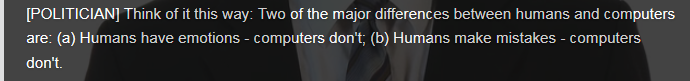
























## 2nd row) Softening an opinion/statement

|  |  |
| --- | --- |
| You can express an opinion or statement **directly**, but sometimes **it may be interpreted as harsh or impolite**. In cases like these, you can **soften** your words to avoid forcing them onto the listener, to avoid straightforward directness by using “**hedge” 篱笆; 避免作正面答复** | |
| Use expressions like these to **soften an opinion or statement**. | |
|  |  |

|  |  |
| --- | --- |
|  | **He has a tendency to argue with everyone.** |
|  |  |

|  |  |
| --- | --- |
|  | **It seems to me** the process is quite risky. |
|  |  |

|  |  |
| --- | --- |
|  | **With respect/No offense,** you don't have all the facts. |
|  |  |

|  |  |
| --- | --- |
|  | We're playing with fire, **in a way**, and we **might** get burned. |
|  |  |

|  |  |
| --- | --- |
|  | We need more research, **in my humble opinion**. |
|  |  |

|  |  |
| --- | --- |
|  | It's the most expensive project ever, **if I'm not mistaken**. |
|  |  |

|  |  |
| --- | --- |
|  | Seems interesting to me, but **the jury's still out(还没有定论 ; 最后结论还有待分晓).** |

|  |
| --- |
| Different parts of speech can also help **soften opinion**. These include: |
|  |
| * **Verbs**, such as seem, tend, appear, indicate, suggest, suppose |
| * **Modals**, such as might, could, may |
| * **Nouns**, such as possibility, assumption, tendency, estimation |
| * **Adjectives and adverbs**, such as probable, quite, nearly, almost, apparently, somewhat |

|  |
| --- |
| * You can use a question tag to soften an opinion or statement, too. |
|  |
| It seems a little careless, **doesn't it?** |

## Done mp3) GM foods

AVA: The jury's still out on **genetic modification**, isn't it? **Seems to me** it's a rather risky business all round. Besides, **GM**'s just way too expensive, to my way of thinking. And a lot of researchers are unhappy about the consequences, too.

JEFF: **With respect**, I don't know that you have all the facts at your disposal.   
**//With respect; With all my respect, Sir. = No offense, sir 毫无冒犯之，恕我直言**

AVA: But **if I'm not mistaken** , didn't the government issue a major paper on this a while back?

JEFF: Yes, but I think people in this country **have a tendency to** **shoot down new ideas** when they first come on the scene.

AVA: No, we don't! Well, I suppose you may have a point there.

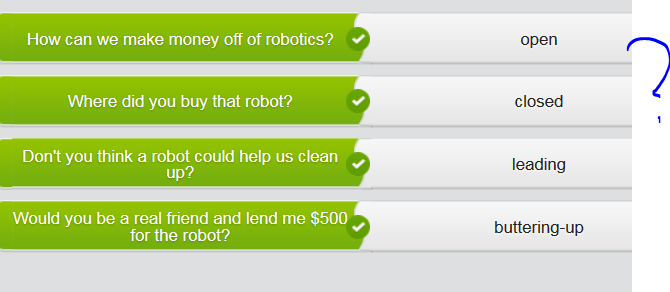
JEFF: Well, I **could be wrong** – it's happened before! But if we have more of a public debate about this issue, I think we'd see there are a lot of assumptions about **GM**, many of which are **somewhat** **dubious**['dubɪəs] 可疑的  , **in my humble opinion(依我个人拙见/愚见 )**

AVA: You, humble? **I think we'll have to agree to disagree on that one**, too! //？同不同意并不重要？

## 3rd row) **Question types (closed/open/leading question)**

|  |
| --- |
| **Question types** |
|  |
| When you are evaluating new inventions, you have to ask a wide variety of questions. Some of the more common question types are listed below. |
|  |
| **Closed questions** |
| A closed question has one definite answer. The answer does not vary. |
|  |
| A: What is the name of your invention? |
| B: I call it the Emotibot. |
|  |
| There is only one answer to this question because the robot only has one name. Closed questions are useful for getting facts or details. |
|  |
| **Open questions** |
| An open question has many possible answers. An open question is used to get an opinion or description. |
|  |
| A: How do you feel about a robot with emotions? |
| B: It's a little strange. I'm not sure that I like the idea. |
|  |
| In this situation, a person could have many different ways of answering the question. |

|  |
| --- |
| **Leading questions** |
| We often use negative questions to try to get someone to give us the answer that we want. We are trying to **lead** a person to agree with us. |
|  |
| A: Don't you think that a robot with emotions is just wrong? |
| B: Well, maybe you're right. I'm not sure. |
|  |
| When someone asks a leading question, you already know the answer that they want to hear. |
|  |
|  |
| **Buttering-up questions ( butter up sb. = flatter sb** 奉承；谄媚**)** |
| Another way to try to get the answer that you want is to praise, or **butter up**, someone in the question. |
|  |
| A: Why don't you use **your incredible knowledge** of robotics and interview the professor? |
| B: Oh, all right. I'll do the interview. |
|  |
| The person asking the question praises the listener's knowledge of robots in order to persuade him to do an interview that he does not want to do. |



## done MP3)

## 4th row) Evaluating a new invention

## Done mp3) **Humanoid/Anthorpomorphic** robotics 像人一样的机器人

You work for a robotics company. An inventor has just pitched the 'Emotibot,' a robot he claims is able to understand human emotion and react empathetically. Your instructions: Find out the technology behind the invention, and if you are not convinced, don't invest.

# Part 4 )

## Stop) Lexical resource

* 根据 in light of sth = based on

e.g. He charged it to set our course for the future, **in light of/based on** new roles and responsibilities of our graduates.  **根据** 斯坦福研究生的新角色与责任，面向未来地设计课程。

e.g. China's concern is that such **terrorist infiltration渗透** will see terrorist attacks in China intensify in coming years, **in light of /based on** a likely **resurgence(复活；再现)** of violence in Afghanistan following the withdrawal of American and NATO forces from the country.

Eg. **In light of**根据 these developments, the 'chatbot' is an interesting aspect of artificial intelligence. The word itself is possibly a newly formed blended word of 'chat' and 'robot,' and is **reminiscent** of the word **'chatterbox**话唠**'**!

* 唠叨话匣子：一个特别健谈的人; 喋喋不休者, 话唠 chatterbox : An extremely talkative person, especially like nagging唠叨 or **grumbling抱怨** for a long time

|  |  |
| --- | --- |
| 渗入; 潜入 (某地方或组织, 做间谍) | **infiltrate /ˈɪnfɪlˌtreɪt/ ; infiltration** 1. V-T/V-I If **people (esp. terrorists) infiltrate a place/organization/nation or infiltrate into it**, they enter it secretly in order to spy on it or influence it, working as an **espionage**['espɪənɑːʒ; -ɪdʒ] ; 渗入; 潜入 (某地方或组织, 做间谍)  eg The U.S. embassy **was infiltrated by a traitor** who is confirmed to be an ISIS terrorist. e.g. Activists had **infiltrated the student movement**. 激进分子已经渗入学生运动。 e.g. He claimed that some countries have been trying **to infiltrate their agents into the republic.** 试图使他们的特工 渗入该共和国。  eg Our men have **infiltrated enemy lines** 渗入/潜入敌军防线  e.g. A team of terrorists have **infiltrated the country**. 一队恐怖分子渗入/潜入该国  eg. Many Chinese slangs and slangs have **infiltrated into the Japanese language**.许多中国成语浸透到日语中 |
|  | Infiltrate: cause (a liquid) to enter by penetrating or permeating['pɜːmɪeɪt] something, such as cotton, sponge; |
| 1. 穿透/渗透； 2.**(尽管很困难，还是成功) 进入/跻身(一个团队，专业机构， 或组织); 3. 打入 (敌对组织)，获取信息或制造麻烦 4.(公司产品）打入 (某市场或地区)** | **penetrate /ˈpɛnɪˌtreɪt/ penetration** 1. V-T If sth or sb. penetrates a physical object or an area, they succeed in getting into it or passing through it. 进入; 穿透 e.g. X-rays can penetrate穿透many objects.  e.g. The thick walls prevented **penetration** by debris from the hurricane. 一堵堵厚墙阻挡了飓风带来的碎片的 **穿透**。 3. V-T If sb. penetrates an organization, a group, or a profession, they succeed in entering it although it is difficult to do so. (**尽管很困难，还是成功) 跻身/进入 (一个团队，专业机构， 或组织) [ penetrate the board 跻身<董事会> ]** e.g. ..the continuing failure of women to **penetrate the higher levels of the board**. 女性 **跻身<董事会 较高层级>** 的连续失败。  e.g. He finally **penetrated the board** and becomes a member of the board. 他最终成功 **跻身<董事会>** 4. V-T If sb. penetrates an enemy group or a rival organization, they succeed in joining it in order to get information or cause trouble, working as an **espionage间谍 or undercover(卧底),** so in this case, “penetrate” = “infiltrate” 打入 (敌对组织)，获取信息或制造麻烦 **[ penetrate/infiltrate a drug ring: 打入一个贩毒团伙; penetrate/infiltrate a human trafficking ring 打入一个人口贩卖的团伙]**  e.g. The CIA had requested our help to **penetrate a drug ring** operating out of Munich. 要求我们协助 **打入<在慕尼黑外活动的一个贩毒团伙>**。  E.g. Jack, an **undercover 卧底 police**, has successfully **penetrated a human trafficking ring**.  5.V-T If a company or country **penetrates a market or area**, they succeed in selling their products there. (公司产品）打入 (某市场或地区) e.g. There have successfully **penetrated the mobile market in Asia** 打入亚洲的手机市场。 |
| (思想、情感或态度)渗入(一个体系或社会），全面影响着（该体系或社会） | permeate /ˈpɜːmɪˌeɪt/  1. V-T If an idea, feeling, or attitude permeates a system or permeates society, it affects every part of it or is present throughout it. (思想、情感或态度)渗入(一个体系或社会），全面影响着（该体系或社会） e.g. Bias against women, that is **sexism**大男子主义, **permeates every level of the judicial system.** 对妇女的偏见 全面影响 司法体系的各个层面。 2. V-T If something permeates a place, it spreads throughout it. (气味, 香水味道)弥漫(在空气, 在整个房间) e.g. The smell of roast beef **permeated the air**. 牛肉的气味 (渗入)弥漫 在空气中。e.g. Her perfume odor **permeates the whole room** 弥漫 在整个房间. |

* mow [məu]
  1. 刈，割(草或谷类等) **[ mow the lawn; mow the grass]**

   
e.g The gardener **mows the grass** regularly. 园丁定期刈草。

e.g. at home and around the office, other kinds of robots can be found putting their programmed skills to work in order to help with more **mundane chores [,mʌn'dein] [tʃɔr] 平凡/日常琐事** like vac**uu**ming the room(吸尘) or **mowing[məu] the lawn割(草或谷类等).** As they are designed to support people with their day-to-day needs, they are called service robots.

* 1. 收割(庄稼、牧草等)：.
* fodder /ˈfɒdə/

1. Fodder is food that is given to cows, horses, and other animals. (动物的) 饲料 **[ fodder for horses/cows ]** e.g. They **mowed[məu] the field** (把地里的草割下来) so as to provide the cattle with **fodder/ˈfɒdə/ 饲料**

2. if you say that sth is fodder for a particular purpose, you mean that it is useful for that purpose and perhaps nothing else. **(供某种用途的) 素材(表不满)** e.g. The press conference simply provided more **fodder素材** for another attack on his character. 只是提供更多的 **素材**，来对他人格进行另一轮攻击。

|  |  |
| --- | --- |
| [口语]V 管理家务，主持家政; N. 料理家务 | housekeep ['hauski:p]; housekeeping /ˈhaʊsˌkiːpɪŋ/ ; housekeeper (女)管家  housekeeping: is the work and organization involved in **running a household运营一个家庭**, including the shopping, washing, sweeping, vacuuming吸尘, cleaning, ironing, and other **housework家务事**.   * **=> 小时工/ 钟点工: charwomen (char:  烧焦n. 炭)**     e.g I thought that cooking and **housekeeping料理家务**were **mundane/household chores /tʃɔː/**, easy tasks. 认为 做饭和 **料理家务** 是 **平凡/日常家务(琐)事**  e.g. [ Science and tech: **humanoid robot** ] At home and around the office, other kinds of robots can be found putting their programmed skills to work in order to help with more **mundane/household chores [,mʌn'dein]** like sweeping, mopping, vac**uu**ming the room(吸尘) or **mowing [məʊ] the lawn割(草或谷类等).** As they are designed to support people with their day-to-day needs, they are called service robots or “robot **housekeeper机器人管家**” . |
| 家务(家务事） | housework /ˈhaʊsˌwɜːk/ Housework is the work such as cleaning, washing, vac**uu**ming吸尘, and ironing that you do in your home for **running your household营一个家庭. [ housework = houseshold chores = mundane chores ]**  家务(家务事), 家务活  e.g Well, I'm a **feminist**, so I think in a household一个家庭, the couple should share the **housework/household chores/mundane chores /tʃɔː/ 平凡/日常家务(琐)事** |
| 琐事 | **chore /tʃɔː/ = trivia 琐事**  A chore is a task that you must do but that you find unpleasant, boring, or unimportant. **[housework/household chores/mundane chores /tʃɔː/ 平凡/日常家务(琐)事]**  e.g. She sees exercise primarily as an unavoidable **chore/trivia**. 看作是不得不做的 **琐事**  e.g. Well, I'm a **feminist**, so I think in a household一个家庭, the couple should share the **housework/household chores/mundane chores /tʃɔː/ 平凡/日常家务(琐)事**  e.g. [ Science and tech: **humanoid robot** ] At home and around the office, other kinds of robots can be found putting their programmed skills to work in order to help with more **mundane/household chores [,mʌn'dein]** like sweeping, mopping, vac**uu**ming the room(吸尘) or **mowing [məʊ] the lawn割(草或谷类等).** As they are designed to support people with their day-to-day needs, they are called service robots or “robot **housekeeper 机器人管家**” .  //feminist; feminism; sexist, sexism = chauvinist |
| 1. 一个家庭;一家人 ; Adj: **家喻户晓的** | **household /ˈhaʊsˌhəʊld/ => householder 一家之主** 1. A household is all the people in a family or group who live together in a house. 一个家庭;一家人；  e.g. I'm growing up in a female-only **household**, therefore, I didn't touch any **masculine** **['mæskjʊlɪn] 男性的**feeling when I was young. …在全体成员均为女性的 **家庭** 里长大。  e.g. Well, I'm a **feminist女权主义者**, so I think in a **household**, the couple should share the **housework/household chores/ mundane chores /tʃɔː/ 平凡/日常家务(琐)事**.  e.g. Nowadays, one **household** normally has two TV sets.  2. **housework = household chores = mundane chores /tʃɔː/** =**平凡/日常家务(琐)事**  3. sb. or sth that is **a household name** or **a household word** is very well known. **家喻户晓的(名字，词) [ become a household word/name 变的家喻户晓 ]**  e.g. … today the Starbucks brand has **become a household word/name.** 星巴克成了 **家喻户晓的** 品牌  e.g. The term, “Cloud”, in this day and age(在当今这个年代), has become such **a household word/name**. “云”这个术语已经成为 **一个家喻户晓的** 词了  e.g. He has become one of the most **sought-after actors**吃香的in CHINA, already **a household word/name**. 他的名字就 家喻户晓 了 |

* **permute** [pə'mju:t] v. change the order or arrangement of sth ; **permutation** [,pə:mju:'teiʃən]; **permutable** [pə'mju:təbl] adj. 可排列的；能交换的: capable of changing the order or arrangement

1. an event in which one thing is substituted for another： substitution replacement

2. the act of changing the order or arrangement of a given number of elements 【数学】排列（组合）; 变化；置换

3. A permutation is one of the ways in which a number of things can be ordered or arranged. e.g. Variation among humans is limited to the possible **permutations of our genes. 基因的排列（组合）**

4. [口语](足球比赛等的)编组

* hard-pressed

1. If someone is hard-pressed, they are under a great deal of strain, tension, and worry, especially because they do not have enough money. **受困/窘迫的 [ 受困/窘迫的 消费者 hard-pressed consumers]**

e.g. The region's **hard-pressed consumers** are spending less on luxuries. 受困/窘迫的 消费者 正在减少奢侈品的消费。

E.g. Community welfare project are being **axed(用斧头坎减/消减)** by **hard-pressed受困/窘迫的** social services departments. 社区福利项目正遭到 **受困/窘迫的 社会服务部门** 的削减

2. If you will be hard-pressed to do sth, you will have great difficulty doing it. **(受困)很难做xxx事 [ be hard-pressed to do = it’s very hard to do = have great difficulty doing sth ]**

e.g. The airline will **be hard-pressed (super difficult) to** make a profit. 航空公司将 **很难** 盈利。

* endow /ɪnˈdaʊ/

1. You say that sb. **is endowed with** a particular desirable ability, characteristic, or possession when they have it by chance or by birth. Sb被天生赋予（财富、健康，和敏锐的智力）

e.g. You **are endowed with** wealth, good health and a lively intellect. 你天生**赋有** 财富、健康

2. V-T If you **endow something with** a particular feature or quality, you provide it with that feature or quality. 赋予sth 某种特征或品质

e.g. Herbs have been used for centuries to **endow a whole range of foods with** subtle flavours. 香草一直被用来 **赋予** 各种食品细腻的味道。

3. If sb. **endows an institution, scholarship, or project**, they provide a large amount of money that will produce the income needed to pay for it. 资助(一个项目， 一个学金项目)

e.g. The ambassador has **endowed资助** a $1 million public-service fellowships programme. 大使 **资助** 了一个100万美元的学金项目。

* 虚华词藻, 表面口头功夫，贫嘴（表不满 r(h)etoric ['rɛtərɪk] //犀牛 r(h)ino [['raɪnəʊ]]= r(h)inoceros  
  If you refer to speech or writing as rhetoric['rɛtərɪk] , you disapprove of it because it is intended to convince and impress people but may not be sincere or honest.   
  e.g. Trump said the US was responding to Kim's **provocations[,prɑvə'keʃən]挑衅**, but insisted his replies were merely in response to **rhetoric**['rɛtərɪk]( 表面口头功夫，贫嘴) from Pyongyang. He also **decried/denounced/excoriated** the situation there, saying he was left a "mess" by previous administrations.
* 批评 decry /dɪˈkraɪ/

|  |  |
| --- | --- |
| decry | **公开谴责; decry sb = criticize it strongly; denounce sb = decry or critize sb in public公开强烈谴责 ; slam, criticize, excoriate[,ɛks'kɔrɪet] 严厉的责难 sb openly; condemn, condemnation; If someone decries an idea or action, they criticize it strongly. [ a salvo of angry words, decry = criticize, denounce = decry strongly in public ]  e.g. He is impatient with those who decry the plan. 批评这项计划的人。 E.g. People decried the campaign as a waste of money. 人民谴责这项运动只是浪费金钱。** |
| To depreciate (currency, for example) by official proclamation or by rumor. 贬低：通过官方声明或谣言贬低（例如货币） |
| denounce | denounce: decry or critize sb in public 公开强烈谴责 |
| 谴责；训斥 | **reprimand: ['rɛprɪmænd]** to complain reprove severely, especially in a formal or official way. 申斥谴责 eg If you Cc someone’s boss on a complaint email, it makes the **reprimand申斥谴责** much worse. |
| (公开)严厉指责 | 1. **excoriate sb. /ɪkˈskɔːrɪˌeɪt/, excoriation**: excoriate sb = criticize, **decry, denounce**, slam them **severely**, **usually in public.** E.g. He proceeded to **excoriate me** in front of the nurses. 他继续在这些护士们面前指责我。 **2). [医]表皮脱落；剥皮** |
| 强烈谴责 | 强烈谴责: condemn sb; condemnation |
| renounce | formally annouce to **relinquish or abandon sth**, usually as a matter of principle 是正式宣布地放弃某事物 eg renounced his claim to the real-estate. 正式宣布放弃了他对房产的要求; renounce his heritage right 正式宣布放弃继承权; renounce his all privileges as a king 正式放弃所有的特权. |
| **与... 断绝关系 renounce with sb**; eg He eventually **renounced with** his son who **is so addicted to** drugs. |
| To revoke in cards. 有牌不跟, 在牌戏中垫牌  **eg Renounce! / Revoke! 有牌不跟** |

## Lexical

* 眼药水；滴眼剂 Eye drops: Eye drops are medicine that you put in your eyes one drop at a time. 眼药
* 指甲钳；指甲夹； nail clipper V.S. manicure ['mænɪkjʊə] N/V 修剪，美甲
* promising: Someone or something that is promising seems likely to be very good or successful, with pretty good prospects 前景or outlook 有望成功的; 前景很好的

**[ 一个有前途的/有前景的学生 a promising student; 一个有前途的/有前景的项目 a promising project; a promising trend]**

e.g. Google said the Loon was seen as a more **promising project**, but concluded Loon was more economically and **technically feasible/viable技术上可行的**

e.g A school has honoured one of its brightest and most **promising students.** 最有前途的学生

e.g. Even though using **humanoid robots** in our routine is **a promising trend有前景/前途的趋势**, **I’d like to point out that** there is a major **downside** to this trend, however. We can assume that jobs that require these professional skills will still need to be carried out by humans, at least **in the foreseeable ['fɔ:si:əbl] future 在可预见的未来,**  however, the poor and middle-class people are the main sacrifices **with the advent of** **anthropomorphic robots**, which means that the line that separate the poor and affluent will become that much more evident.

* **流水线工作assembly-line job**

e.g. Robots help perform more than 300,000 surgeries per year in the U.S.. They explore places that humans cann’t, such as the deepest paths of oceans and celestial [sə'lɛstʃəl] space. But most often, robots perform routine, repetitive **assembly-line jobs** that skyrocket the efficiency and increase productivity, what is more, lower the labor cost, like packing produce or attaching wheels to cars.

* **foreseeable ['fɔ:si:əbl]**

e.g. Even though using **humanoid robots** in our routine is **a promising trend有前景/前途的趋势**, **I’d like to point out that** there is a major **downside** to this trend, however. We can assume that jobs that require these professional skills will still need to be carried out by humans, at least **in the foreseeable ['fɔ:si:əbl] future 在可预见的未来,**  however, the poor and middle-class people are the main sacrifices **with the advent of** **anthropomorphic robots**, which means that the line that separate the poor and affluent will become that much more evident.

* sprawl /sprɔːl/ V.S. spawn
* sprawl
  1. [ a sprawling city: 一个无计划，胡乱扩张的城市; urban sprawl 城市扩张；都市向郊区扩张的现象; e.g. Firecrackers and fireworks are just one contributing factor to pollution in Delhi, which lacks an effective public transportation system. The sprawling city 一个无计划,胡乱扩张的城市 has 9 million vehicles, and new license plate numbers 车牌号are being registered at a rate of 1,400 per day. Cooking fuel, construction dust and coal-fired power plants add poisonous particles and toxic gasses to the mix. The Friday's ruling is not the first time the court has enforced action on pollution. In 2015, the court levied a new tax on征兵，征税 commercial trucks entering the city -- a draconian(harsh and severe) measure that environmentalists viewed as a positive.
  2. spraw[l out] on the bed. = spraw[l o]n the bed 摊开四肢躺在床上; spraw[l o]ut on the couch = spraw[l o]n the couch ] 1. V-I If you sprawl somewhere (e.g. bed or couch), you sit or lie down with your limbs, legs and arms, spread out in a careless way. 伸开四肢坐着; 摊开四肢躺着; (limbs) 不规则地伸展的 e.g. She sprawled (out) on the bed as he had left her, not even moving to cover herself up. 她摊开四肢躺在床上，甚至懒得动动把自己盖上。
  3. spraw[l o]ut means the same as . 伸开四肢坐着; 摊开四肢躺着 e.g. He would take two aspirin['æspərin] and spraw[l o]ut on his bed. 他会吃两片阿斯匹林，然后摊开四肢躺在床上。
  4. V-I If you say that a place (e.g. a city, a country) sprawls, you mean that it covers a large area of land. 延伸 e..g The State Recreation Area sprawls over 900 acres on the southern tip of Key Biscayne island.
  5. You can use sprawl to refer to an area where a city has grown outward in an uncontrolled way, without a careful plan. (城市的) 无计划, 胡乱扩张区域 e.g. The whole **urban sprawl** of Ankara contains over 2.6 million people.
* spawn /spɔːn/

1.N  Spawn is a soft, jelly-like substance containing the eggs of fish, or of animals such as frogs. (鱼、蛙等的)卵 frog spawn蛙卵

2.V-I When fish or animals such as frogs spawn, they lay their eggs. (鱼、蛙等)产卵

e.g. ...fish species like salmon and trout鳟鱼 which go upstream, spawn and then die. 会洄游、产卵，然后死亡。

3.V-T If something spawns something else, it causes it to happen or to be created. 引发出一个 spawn sth e.g. Tyndall's inspired work spawned a whole new branch of science. 引发出一个<新的科学分支>

* reminiscent /ˌrɛmɪˈnɪsənt/,  reminiscence ['rɛmə'nɪsns]  回忆；怀旧；引起联想的相似事物

 V.S. nostalgia 怀旧

1. bring old memory to mind, reminiscent = remindful 回忆往事的；怀旧的；=> **reminiscently怀旧地；回忆地**
2. If you say that one thing **is reminiscent of** another, you mean that it reminds you of another similar thing. 令人想起/联想xxx **[ be reminiscent [,rɛmɪ'nɪsnt] 令人想起的 of sth ]** [ reminiscent narrative 回忆性叙事; memorialist reminiscent 回忆录作者 ]

e.g. We drank from wax-coated paper cups, which **is reminiscent of** a visit to the dentist 让我 **想起/联想了** 那次去看牙医的事。

* arduous /ˈɑːdjʊəs/

Something that is arduous is difficult and tiring, and involves a lot of effort. 艰难的,费力的（job, work） **[ an arduous work 一个费力的工作; , an arduous or menial work费力的工作或(仆人)干的家庭粗活 a long, hot and arduous trip 一段漫长、灼热、艰难的旅程 ]**E.g. DP is **an arduous work**, which however is **thankless 吃力不讨好的**.

e.g. In Japan, people have recently designed a female receptionist robot who smiles when you enter the office! There are many different kinds of robots today. They can be found on factory floors doing **assembly-line work [工经] 流水作业线** on car production, for example. They have replaced human workers doing repetitive, **arduous ['ɑrdʒuəs] 费力的or menial work (仆人)干的家庭粗活）** in dangerous environments, often in a more time-effective way.

* **imitate/mimic sb.**e.g. **Humanoid robots** are being built to **mimic/imitate** human characteristics and **personal traits**特性特点

E.g. I've seen a robot **imitate**/**mimic** a bee. It **buzzed**发出嗡嗡声and flew around a room.

* sentient **/ˈsɛntɪənt/** A sentient being is capable of experiencing things through its senses. 有感知能力的

e.g. Why do we want non-human things, like robots, to be sentient?

[sentiment](javascript:void(0);) 感情，情绪；多愁善感; [sentimental](javascript:void(0);) 感伤的；感情脆弱/多愁善感的;

[sensuous](javascript:void(0);) 感觉上的，依感观的；诉诸美感的[sensuously](javascript:void(0);) 感觉上

[sentimentalism](javascript:void(0);) 感情主义；沉于情感

* anthropomorphic **/ˌænθrəpəˈmɔːfɪk/** [anthropomorphism](javascript:void(0);)  V.S. **humanoid**

1.ADJ Anthropomorphic means relating to the idea that an animal, a god, or an object has feelings or characteristics like those of a human being. 拟人化的

e.g. ..the anthropomorphic attitude to animals. ...对动物拟人化的观点。 E.g. Anthropomorphic robots make me nervous. They look to much like humans. Therefore, they’re also called **humanoid  ['hjʊmə'nɔɪd]**  像人的robots.

* humanoid ['hju:mənɔid] an automaton that resembles a human being [ **humanoid  ['hjʊmə'nɔɪd]**  像人的robots.]   
  E.g. Anthropomorphic robots make me nervous. They look to much like humans. Therefore, they’re also called **humanoid  ['hjʊmə'nɔɪd]**  像人的robots.  
  e.g. Another 75,000 jobs will be lost in **textiles 纺织业** and clothing **with the burgeoning advent of(随着xxx的出现)**  **humanoid robots  ['hjʊmə'nɔɪd] ['rəʊbɒt]**
* menial **/ˈmiːnɪəl/**

1.ADJ Menial work is very boring, and the people who do it have a low status and are usually badly paid. 卑微的 仆人的；卑贱的; 奴颜婢膝的；低下的；适于仆人的 (工作、职业)不体面的；乏味的 [ menial work; menial job] [贬义](仆人)干家庭粗活的 e.g. Robots have limited skills, so they are often put to carry menial jobs (**(仆人)干的家庭粗活**).

e.g. ...low-paid menial jobs, such as cleaning and domestic work. …工钱少又卑微的工作，诸如打扫清洁或做家务。

e.g. In Japan, people have recently designed a female receptionist robot who smiles when you enter the office! There are many different kinds of robots today. They can be found on factory floors doing **assembly-line work** on car production, for example. They have replaced human workers doing repetitive, **arduous ['ɑrdʒuəs] 费力的or menial work（(仆人)干家庭粗活的） in** dangerous environments, often in a more time-effective way. These industrial robots are sometimes blamed for taking away work from their human counterparts, however.

* underscore /ˌʌndəˈskɔː/  = underline

1.V-T If something such as an action or an event underscores another, it draws attention to the other thing and emphasizes its importance. 突出显示xxx; 强调 e.g. The Labour Department figures **underscore** the shaky state of the economic recovery. 数字 **突出显示** 了经济复苏的不稳定。

2.V-T If you underscore something such as a word or a sentence, you draw a line underneath it in order to make people notice it or give it extra importance. 在…下面划线 e.g. He heavily underscored/underlined his note to Shelley. 重重地划了线。

* pooh-pooh['pu:'pu:] (呸！鄙视) V.S. poo /puː/ Poo is a child's word for faeces. (儿童用语)大便; 臭臭

**It is often said that reality mirrors art (现实影射艺术).** In today's world of robotics and **artificial intelligence**, it is perhaps more accurate to talk about **fact mirroring (science) fiction**. The link between **science fiction** and reality has long been **pooh-poohed['pu:'pu:] (呸！鄙视)**by skeptics and scientists **alike类似于**, but no-one on either side of the argument can question the fact that the world of sci-fi has increasingly become the world of Wi-Fi, in daily life from the world's poorest to the most developed countries.

* **name-calling (点名)骂人，中伤**

e.g. There has been **name-calling骂人，中伤** and heightened **tensions** between Washington and Pyongyang this week as the UN met in New York. In his speech Tuesday Trump threatened to ["totally destroy" North Korea](http://www.cnn.com/2017/09/19/politics/trump-north-korea-reaction/index.html) if the US was forced to defend itself or an **ally['ælaɪ]**. UN Secretary-General António Guterres met with Ri on Saturday.

* "The Secretary-General expressed concern over the **tensions** on the Korean Peninsula and **appealed for(呼吁，恳求；上诉)** de-escalation and full implementation of relevant Security Council resolutions," a statement from a UN spokesperson said. "The Secretary-General emphasized the need for a political solution."
* salvo ['sælvəu]

1.N A salvo is the firing of several guns or missiles at the same time in a battle or ceremony (in ceremony, like “**gun salute”** to show respect to sb.). (枪炮的)齐射; (尤指)礼炮齐鸣 (gun salute) e.g. They were to fire a salvo of blanks, after the **national anthem**. 齐射一阵空包弹。

2.N 2.N **A salvo of ( angry words, applause)** is a lot of them spoken or written at about the same time. 猛烈抨击; (抨击, 掌声、欢呼声等的)突然爆发：如炸弹齐投或武器齐射一样的东西，

e.g. His **testimony [法] 证词，证言**, however, was only one in **a salvo of new attacks**一轮猛烈抨击的。

* rogue /rəʊɡ/

1. A rogue is a man who behaves in a dishonest or criminal way. 流氓; 无赖  
E.g. Trump is a rogue. e.g. The heated salvos猛烈抨击 also came on a day in which mysterious seismic['saɪzmɪk] activity in North Korea refueled concerns over the rogue nation无赖国家's nuclear ambitions. North Korean Foreign Minister speaking before the United Nations, angrily responded to US President Donald Trump's **denouncement/excoriation [ek,skɔ:ri'eiʃən]公开/谴责抨击** in which he referred to Kim Jong Un as "Rocket Man.” And DPRK as a “**rogue nation 流氓国家**”.   
e.g. North Korea is considered a **rogue nation 流氓国家**. As the rogue communist state of North Korea continues to steam ahead in its quest for nuclear weapons and long-range missiles, US President Donald Trump has vowed to stop Pyongyang's progress.

2. if man behaves in a way that you do not approve of but you still like him, you can refer to him as a rogue. 捣蛋鬼; 小坏蛋 **[ 可爱的捣蛋鬼 a lovable rogue]**

3. ADJ A rogue element is someone or something that behaves differently from others of its kind, often causing damage. 行为异常的 e.g. Computer systems throughout the country are being affected by a series of mysterious **rogue/weird** programs, known as viruses. 神秘的异常程序的影响

* bomber /ˈbɒmə/

1.N Bombers are people who cause bombs to explode in public places. 在公共场所引爆炸弹者

e.g. Detectives hunting the bombers who exploded the **ticking bomb定时炸弹** in London will be eager to interview him.

2.N A bomber is a military aircraft which drops bombs in the designated place 轰炸机 e.g. ...a high-speed bomber with twin engines. …一架双引擎高速轰炸机



* fiery /ˈf**aɪər**ɪ/  ; fire => fiery

1.ADJ If you describe something as fiery / ˈfaɪərɪ /, you mean that it is burning strongly or contains fire. 雄雄燃烧的 **[ a fiery explosion: 起火(的)爆炸]** e.g. A helicopter crashed in **a fiery explosion** in Vallejo.

2.ADJ You can use fiery for emphasis when you are referring to bright colours such as red or orange. 火一般的 (颜色) **[ fiery <color>; 火红色fiery red; fiery orange ]** e.g. The sky turned from **fiery red火红色** to lemon yellow. 天空由火红色变成了柠檬黄。

* seismic /ˈs**aɪz**mɪk/

1.ADJ Seismic means caused by or relating to an earthquake. 地震的; 地震引起的 **[ seismic activity; seismic waves 地震波 ]** e.g. Earthquakes produce two types of **seismic waves**. 地震产生两种类型的**地震波**。

2.ADJ **A seismic shift or change** is a very sudden or dramatic change. 突然的/戏剧的(改变） **[A seismic shift , a seismic change]** e.g. I have never seen such **a seismic shift** in public opinion in such a short period of time. 如此突然的转变

* sb要负全责 **[ sb. should be held totally/fully responsible/accountable ]**  
  e.g. "**In case that** innocent lives of the US are harmed because of this suicide attack, **Trump will be held totally responsible sb.要负全责**."

|  |  |
| --- | --- |
| **repercussion /ˌriːpəˈkʌʃən/** | If an action or event has repercussions /ˌriːpə/, it causes **unpleasant things** to happen some time after the original action or event. 影响/后果 [深远的影响/后果:further repercussions; 沉痛的后果painful repercussions ] |
| **percussion (instrument);** | percussion (instrument, e.g. drum);  percussor[pə'kju:sə]叩诊器 |
| **concussion: 冲击；震荡；脑震荡** | /kənˈkʌʃən/: If you suffer a concussion after a blow to your head, you lose consciousness for a while or feel sick or feel **nauseous ['nɔʃəs].**  e.g. Nicky was rushed to the hospital with a concussion |

* simile  ['simili] V.S. metaphor
  + simile n. 明喻；直喻 A looks like B. A looks as B; A is like B
  + metaphor  ['metəfə] n. 暗喻，隐喻；比喻说法 A is B

## 1st) row **Simile and metaphor**

Great writers use colorful language to describe and explain their ideas. They often use comparisons to help their readers understand what they mean. Two common techniques that they use are **simile and metaphor.**

**Simile ['sɪməli]**

A simile is a comparison that uses the word 'like.' Robert Burns, the famous Scottish poet, wrote one of the most famous English-language similes.

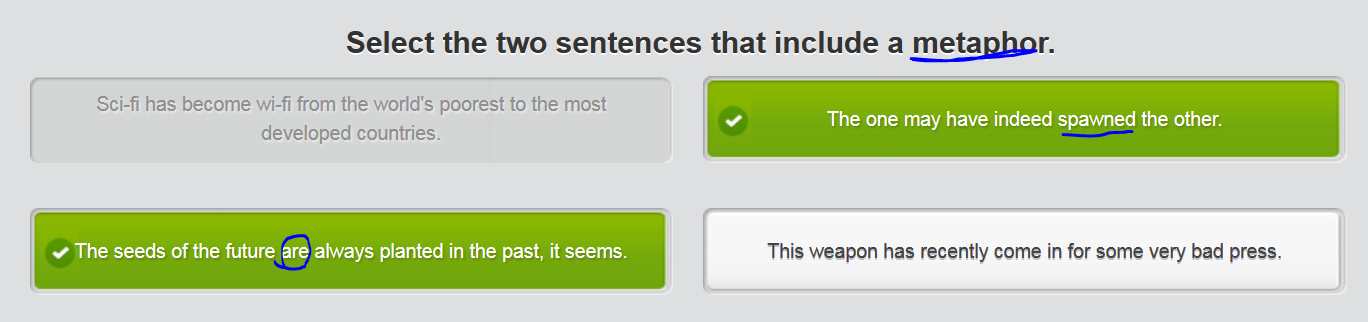
e.g. My love's **like** a red, red rose, that's newly sprung in June.

**Metaphor**

A metaphor is very similar to a simile, but does not have the word 'like.' William Shakespeare, the English playwright, often used metaphors in his plays. One of the most famous metaphors is in his play 'King Lear.'

e.g. All the world **is** a stage, and all the men and women merely players. => compare the world as “a stage”.

e.g.



## Reading) Sci-fi V.S. reality

**From sci-fi to Wi-Fi?**

**It is often said that reality mirrors art (现实影射艺术).** In today's world of robotics and **artificial intelligence**, it is perhaps more accurate to talk about **fact mirroring (science) fiction**. The link between **science fiction** and reality has long been **pooh-poohed['pu:'pu:] (呸！鄙视)**by skeptics and scientists **alike类似于**, but no-one on either side of the argument can question the fact that the world of sci-fi has increasingly become the world of Wi-Fi, in daily life from the world's poorest to the most developed countries.

But where did all this begin? For members of Generation X who believe, as indeed do most youth generations, that they invented everything, it may come as something of a surprise to learn that robotics has probably been around since **the dawn of civilization**.

Ancient cultures told stories in their myths and legends about 'artificial people,' and early Greeks and Muslim scholars devised prototypes of objects with what are now considered robotic characteristics and defining features. Leonardo da Vinci, thought of as the archetypical **Renaissance** Man, apparently made drawings of a mechanical knight which – or should that be who? – could sit up, wave its arms and move its head and jaw in what have come to be defined, with the benefit of **retrospective hindsight,** as the beginnings of a **humanoid** ['hjʊ**mə**'nɔɪd]似人类的 robot **(“anthropomorphic [,ænθrəpə'mɔrfɪk]拟人)** . And all of this some five hundred years before we had movies like 'Blade Runner' or 'I, Robot' to appeal to our **futuristic senses**. The seeds of the future are always planted in the past, it seems.

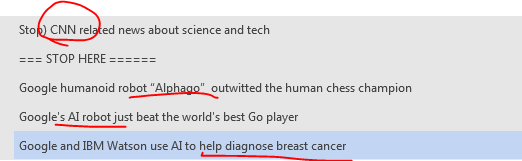
This link between fact and science fiction has given rise to many interesting discussions. Erudite and **philosophical** debates rage as to whether the popular TV sci-fi series, 'Star Trek' – now some 40 years old – was actually responsible for **ushering** in many of today's handheld devices. **Proponents/supporters**, and indeed major actors involved with the original series like William Shatner, who plays Captain James T. Kirk, contend that the writers were nothing short of **visionaries远见家** — modern-day equivalents of men like Da Vinci, who in the 15th century in some inexplicable way managed to see into the future and predict what was to come. Advocates of this idea point to devices such as the **'phaser [电]移相器；[电]相位器**,' and its much-loved accompanying TV-line, 'Set **phasers** to stun.' This program prop was like a gun that could immobilize or, on occasion, even kill an enemy or being by shooting rays at them. Fast forward to the present when police use 'aids' such as tasers, hand-held gadgets which can immobilize. It is interesting to note how the names of these two devices rhyme, lending yet more credibility to the idea that the one may have indeed **spawned(产卵/引发出一个xxx)** the other. //V-T If **something spawns something else**, it causes it to happen or to be created. 引发出了一个xxx e.g. Tyndall's inspired work spawned a whole new branch of science.

Sci-fi to Wi-Fi. Our world is more and more like a science-fiction TV show!

## 2nd row) Artificial intelligence

## Types of h**umanoid robotics**” ['rəʊbɒt]

|  |
| --- |
| **[ service robots ]**  In China, the housekeeper robot is **burgeoning** in the **emerging markets** of AI. It’s **a promising tread** that almost each household owns at least one **humanoid robot** to liberate housewives from **household/mundane chores[tʃɔ:(r)z].** This kind of robots are controlled by predefined computer programs so that they can be **flexibly** triggered at specific time to do **menial works(仆人)的活**, such as sweeping, mopping, vac**uu**ming吸尘, or even **mowing məʊ lawns割(草或谷类等)**. Therefore, we also call this type of robot as “intelligent service assistant”.  =>**drawback**: replace the **charwoman钟点工 who might lose one of their source of income** |
| **[ Assembly-line work ]**  But most often, they can be found doing routine, repetative **assembly-line work** on factory floors, like like packing products, **grinding beef 绞肉** or producing noodles. **With the help of robots,** this way of working drastically mounts the efficiency and increase productivity, **what is more,** lower the labor cost. This type of robots is entitled ‘industrial assistant`.  =>**drawback**: replace the **poor or middle-class person who might lose one of their source of income** |
| **[ Arduous job in dangerous situation费力的]**  Last but not least, these **humanoid/anthropomorphic robots** have replaced human workers doing **arduous ['ɑrdʒuəs] 费力的or menial work（(仆人)干家庭粗活的）** in dangerous environments, often in a more time-effective way. For examples:   * + the military and police often make use of robots to go into areas of danger; they’ve been called in to situations where there have been unexploded mines or bombs and sent in to **defuse** them.   + Most people seem more than satisfied with this, and in fact prefer that these **humanoid robots** do the job than cute-looking **sniffer dogs专门嗅探毒品或爆炸物的警犬** or real men or women!   + help to search plane wreckages or fuselage in deepest ocean   + In a similar manner, the use of robotic arms or 'limbs' have helped astronauts work in deep space more easily, another example of dedicated robots. |
| **In this day and age,**   * + Robots help perform more than 300,000 **surgeries** per year in the U.S   + **款围棋人工智能程序，由Google旗下DeepMind公司开发（AlphaGo）, see the CNN news** |



|  |
| --- |
| https://cns2.ef-cdn.com/Juno/15/33/12/v/153312/GE_16.1.4.2.1_robot.jpg The “thin” links between robots and humans continue to be debated. In some cases, robots ['rəʊbɒt] look very much like machines, but in other cases they've been built to **mimic/imitate** human features, characteristics, or traits, esp to **imitate/mimic human’s sentiment,** and appear very **humanoid**['hjʊmə'nɔɪd]**像人的as a result.**  There has always been heated debate over the question as to the **relationship between intelligence and robots** - do they possess the same intelligence as humans, better or just different? **Robots** have largely been seen as being programmed with artificial intelligence, although with continuing developments in the field of AI, the trend is in the direction of more and more human-like features of intelligence. **Moreover**, work is currently underway around the globe to develop “sentient **['sɛntɪənt] 有感情/感觉的**” robots that not only think and move like humans but also react **emotionally** to us and their environment.  **In light of/based on**根据 these developments, the 'chatbot' is an interesting aspect of artificial intelligence. The word itself is possibly a newly formed **blended word** of 'chat' and 'robot,' and **is reminiscent[,rɛmɪ'nɪsnt]令人想起的 of** the word **'chatterbox话唠'**! The chatbot is an artificial being programmed to have conversations with us, either via on-screen text messages, through speech recognition or both. They often have human names, and designers often try to give the bots 'personality' features such as **a sense of humor** and **a sense of well-being(幸福感).**  In many ways, this represents what may be the beginnings of the ultimate development in artificial intelligence - as computer programmers and AI specialists **alike**类似于look for ways to dissolve溶解or blur使…模糊不清 the boundaries between human and robot, **endowing赋予/ɪnˈdaʊ/ the latter with** more and more physical and mental **anthropomorphic[,ænθrəpə'mɔrfɪk]拟人的**features, like skin or emotions, drawing the line ever-so-thin between human and machine. Which leaves us all wondering: Will the storyline of Blade Runner come to pass in our time, when the human race will **be hard-pressed to identify** whether beings are human or artificially-intelligent **sentient ['sɛntɪənt] 有感情/感觉的beings**? //**很难做xxx事 [ be hard-pressed to do = it’s very hard to sth = have great difficulty doing sth ]**  Even though using **humanoid robots** in our routine is **a promising trend有前景/前途的趋势**, **I’d like to point out that** there is a major **downside** to this trend, however. We can assume that jobs that require highr or professional skills will still need to be carried out by humans, at least **in the foreseeable ['fɔ:si:əbl] future 在可预见的未来,**  however, the poor and middle-class people who are replaced by **humanoid computer programs** are the main sacrifices **with the advent of** **anthropomorphic robots**, which means that the line that separate the poor and affluent will become that much more evident.  As this trend continues, we need to figure out how to add robots to create an optimal workforce instead of using them to simply replace humans. |
|  |

## done mp3) radio



## 3rd row) The future

## Not mp3) radio























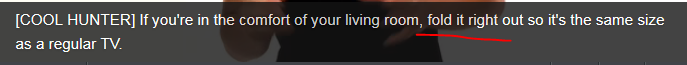












  **(magic wand魔法棒)**

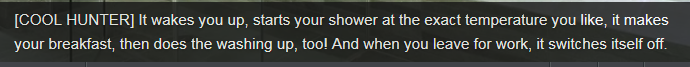
****





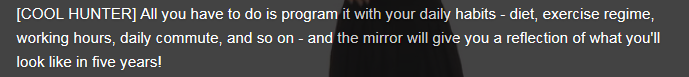


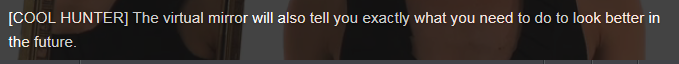
 













## 4th row) Writing: **humanoid['hjʊmə'nɔɪd]/anthropomorphic [,ænθrəpə'mɔrfɪk] robotics**

Writing about robots in society. Write a paragraph describing how robots are being used **in your country.** How do you feel about them? In what ways will they positively and negatively affect society **(advantages and drawbacks)** ?

## Sample

Robots help perform more than 300,000 surgeries per year in the U.S.. They explore places that humans cann’t, such as the deepest paths of oceans and celestial [sə'lɛstʃəl] 天空的 space. (help to search plane wreckages or fuselage in deepest ocean)

But most often, robots perform routine, repetitive **assembly-line jobs** that skyrockets the efficiency and increase productivity, **what is more,** lower the labor cost, like packing produce or attaching wheels to cars.

Robots perform an increasingly large proportions of **arduous jobs or menial /ˈmiːnɪəl/ tasks** in the U.S., which I feel is **a promising trend有前景/前途的趋势**.

* Arduous job: e.g. robot can help spot persons with living characters by replacing sniffer dogs;
* Menial tasks: e.g. work like a housekeeper, **… household/mundane chores[tʃɔ:(r)z],** like sweeping, vacuuming, mowing the lawn

[Pros and cons] Even though using **humanoid ['hjʊmə'nɔɪd]robots** in our routine is **a promising trend有前景/前途的趋势**, **I’d like to point out that** there is a major **downside** to this trend, **though**. We can assume that jobs that require higher or professional skills will still need to be carried out by humans, at least **in the foreseeable ['fɔ:si:əbl] future 在可预见的未来,**  however, the poor and middle-class people who are replaced by **humanoid, intelligent computer programs** are the main sacrifices **with the advent of** **anthropomorphic robots**, which means that the line that separate the poor and **affluent** will become that much more evident(贫富差距会更加明显). For example, **charwomen**钟点工, to some degree, will be replaced by the “housekeeper” robot and will lose one of their **source of income**. **//emerging affluent 暴发户**

As this trend continues, we need to figure out how to add robots to create an optimal workforce instead of using them to simply replace humans.

## My writings (how robots are being used **in your country, Note “in your country” )**

|  |
| --- |
| **[ service robots ]**  In China, the housekeeper robot is **burgeoning** in the **emerging markets** of AI. It’s **a promising tread** that almost each household owns at least one **humanoid robot** to liberate housewives from **household/mundane chores[tʃɔ:(r)z].** This kind of robots are controlled by predefined computer programs so that they can be **flexibly** triggered at specific time to do **menial works(仆人)的活**, such as sweeping, mopping, vac**uu**ming吸尘, or even **mowing məʊ lawns割(草或谷类等)**. Therefore, we also call this type of robot as “intelligent service assistant”.  =>**drawback**: replace the **charwoman钟点工 who might lose one of their source of income** |
| **[ Assembly-line work ]**  But most often, they can be found doing routine, repetative **assembly-line work** on factory floors, like like packing products, **grinding beef 绞肉** or producing noodles. **With the help of robots,** this way of working drastically mounts the efficiency and increase productivity, **what is more,** lower the labor cost. This type of robots is entitled ‘industrial assistant`.  =>**drawback**: replace the **poor or middle-class person who might lose one of their source of income** |
| **[ Arduous job in dangerous situation费力的]**  Last but not least, these **humanoid/anthropomorphic robots** have replaced human workers doing **arduous ['ɑrdʒuəs] 费力的or menial work（(仆人)干家庭粗活的）** in dangerous environments, often in a more time-effective way. For examples:   * + the military and police often make use of robots to go into areas of danger; they’ve been called in to situations where there have been unexploded mines or bombs and sent in to **defuse** them.   + Most people seem more than satisfied with this, and in fact prefer that these **humanoid robots** do the job than cute-looking **sniffer dogs专门嗅探毒品或爆炸物的警犬** or real men or women!   + help to search plane wreckages or fuselage in deepest ocean   + In a similar manner, the use of robotic arms or 'limbs' have helped astronauts work in deep space more easily, another example of dedicated robots. |
| **In this day and age,**   * + Robots help perform more than 300,000 **surgeries** per year in the U.S   + **款围棋人工智能程序，由Google旗下DeepMind公司开发（AlphaGo）, see the CNN news** |

(Leading sentence)

In China, the housekeeper robot is **burgeoning** in the **emerging markets** of AI. It’s **a promising tread** that almost each household owns at least one humanoid robot to liberate housewives from **household/mundane chores**. This kind of robots are controlled by predefined computer programs so that they can be triggered at specific time to do cleaning tasks, such as sweeping, mopping, vac**uu**ming吸尘, or even mowing **məʊ** lawns**割(草或谷类等)**.

Pros and cons ( advantages and drawbacks)

* Pros: increase efficiency and productivity. In some dangerous areas, also help to reduce risks of human from being injured
* Cons: low or middle-class are sacrifices, e.g. household robot replaces the charwoman who lost their source of income

(ending sentence)

# Science-Industry English

<https://ec.ef.com.cn/school/studyunit#school/e5a45db6-975a-47c4-b60c-24e2835a3b7b/e5a45db6-975a-47c4-b60c-24e2835a3b7b/8ece7815-7370-4dc3-9eeb-ad76567739f5/aa001de5-6a4a-4027-a3ab-b24a23dfbe84>

# MP3 STOP

## Lexical

|  |
| --- |
| filter /ˈfɪltə/  1.[V-T](javascript:;)To filter a substance means to pass it through a device which is designed to remove certain particles contained in it. 过滤  => a filter is a device through which a substance is passed when it is being filtered. 过滤器  [词条图片](javascript:;)  2.[V-I](javascript:;)If **[ light or sound filters into a place**], it comes in weakly or slowly, either through a partly covered opening, or from a long distance away. (光、声) 透入; 光照进了(xxx地方)  e.g.  **Light filtered into my kitchen** through the soft, green shade of the honey locust tree.  光线透过皂荚树柔和的绿荫照进了我的厨房。  =>[M](javascript:;)A filter is a device through which **sound** or **light** is passed through and which blocks or reduces particular sound or light frequencies. 滤声器; 滤光器  e.g.  You might use a yellow filter to improve the clarity of a hazy horizon. 你可以用一个黄色滤光器来提高模糊的地平线的清晰度。  3.[V-I](javascript:;)When **[ news or information filters through to sb.],** it gradually reaches them. (新闻、信息等) 逐渐传开, 传到某人那里  e.g.  It took months before the findings began to **filter through to the politicians**. 调查结果才开始 **逐渐传到<政治家们>那里**。  e.g.  News of the attack quickly **filtered through the college, and later to** the victims’ family袭击的消息很快就在这所大学传开了, 然后 **逐渐传到<家长>那里**  e.g. Few weeks after their divorce, the information finally **filters through to** their parents. |

|  |  |
| --- | --- |
| 我可以插个嘴吗/插个话吗 | \* VERB If you say that someone is **[butting in],** you are criticizing the fact that they are joining in a conversation or activity without being asked to.(不礼貌的) 插话进来 e.g.   Sorry, I don't mean to **butt in.** 对不起，我不是故意要插一杠子。 e.g. “Can I **butt in here/jump in here**?”　 我可以插个嘴吗/插个话吗？  \* chime in: [ a PHRASAL VERB ] If you chime in, you say something just after someone else has spoken. 插话  e.g.  "Why?" Pete asked impatiently. —"Yes, why?" Bob **chimed in**鲍勃插嘴说. "It seems like a good idea to me." |
| “你太过分了” | cross the line 跨过线, 太过分了  e.g. You have really **crossed the line** this time. 你真的做的太过分了  e.g. Chandler: Hi Peter. Have you made your peace with your wife yet? 嗨Peter，你和你妻子和好了吗？ Peter: Not really. She’s really pissed. 没有呢。她还在生气。 Chandler: It’s a shame, but you’ve really **crossed the line** this time. 很遗憾，但是这次你真的做的太过分了！ Peter: I know. I feel terrible. I will do my best. 我知道。我感觉糟透了。我会努力的。 |

## Lexical-ScienceRelated

# STOP my study

Table. 发芽

|  |
| --- |
| germinate /ˈdʒɜːmɪˌneɪt/; germination      |TEM8 (germinatinggerminatedgerminates)  1.  [V-T/V-I](javascript:;)If a seed germinates or if it is germinated, it starts to grow. 使发芽; 发芽  •  Some seed varieties germinate fast, so check every day or so.   有一些品种的种子发芽快，所以差不多每天都要察看一下。  2.  [N-UNCOUNT](javascript:;)发芽  •  The poor germination of your seed could be because the soil was too cold.   你的种子发芽不好，可能是因为土壤太冷。  3.  [V-I](javascript:;)If an idea, plan, or feeling germinates, it comes into existence and begins to develop. 形成  •  ...a big book that was germinating in his mind.   …正在他脑中酝酿的一部大作。  1.  [I,T] if a seed germinates, or if it is germinated, it begins to grow  （使）发芽  [SYN](javascript:;) SPROUT  2.  [I] if an idea, feeling etc germinates, it begins to develop  〔想法、感觉等〕开始形成，萌发  •The idea of setting up his own company began to germinate in his mind. 他萌生了自己开公司的想法。  e.g. We can say with confidence that a lack of oxygen slows germination发芽 down.  e.g. We hypothesize[haɪ'pɑθəsaɪz] that a lower temperature may slow germination发芽 down. //N) hypothesis [haɪ'pɑθəsɪs] |
| sprout /spraʊt/      |CET6+ TEM4 (sproutingsproutedsprouts)  1.  [V-I](javascript:;)When plants, vegetables, or seeds sprout, they produce new shoots or leaves. (植物、蔬菜、种子) 发芽  •  It only takes a few days for beans to sprout.   豆子只需几天就会发芽。  2.  [V-I](javascript:;)When leaves, shoots, or plants sprout somewhere, they grow there. (叶子、芽、植株) 长出  •  Leaf-shoots were beginning to sprout on the hawthorn.   叶芽开始在山楂树上长出来。  3.  [V-T/V-I](javascript:;)If something such as hair sprouts from a person or animal, or if they sprout it, it grows on them. (人、动物) 长出 (毛发等); (毛发等) 长出来  •  She is very old now, with little, round, wire-rimmed glasses and whiskers sprouting from her chin.   她现在很老了，戴着小而圆的金属丝框眼镜，下巴长出了胡须。  4.  [N-COUNT](javascript:;)Sprouts are vegetables that look like tiny cabbages. They are also called brussels sprouts. 抱子甘蓝  1.  [I,T] if vegetables, seeds, or plants sprout, they start to grow, producing shoots , buds , or leaves  〔蔬菜、种子、植物〕发芽，抽芽；开始长出〔叶子〕  •Move the pots outside when the seeds begin to sprout. 种子开始发芽时把盆搬到外面去。  •Trees were starting to sprout new leaves. 树上开始抽出新叶。  2.  [I] to appear suddenly in large numbers  突然大量出现，大量冒出  •Office blocks are sprouting up everywhere. 到处都有办公大楼冒出来。  3.  [I,T] if something such as hair sprouts or if you sprout it, it starts to grow  〔头发等〕开始长出；〔某人〕开始长〔毛发等〕  •Jim seemed to have sprouted a beard. 吉姆好像长出胡子了。  sprout 2   n. [C ]  英  MEANINGS 义项  1.  a small green vegetable like a very small cabbage  球芽甘蓝  [SYN](javascript:;) BRUSSELS SPROUT especially BrE 【尤英】  [→ see picture at 见 vegetable 1](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\?keyword=vegetable)  2.  a new growth on a plant  〔植物的〕苗；芽，嫩枝  [SYN](javascript:;) SHOOT  3.  [usually plural,一般用复数] an alfalfa seed which has grown a stem and is eaten  〔可食的〕苜蓿芽 |
| burgeon /ˈbɜːdʒən/ => burgeoning ['bə:dʒəniŋ] adj. 增长/发展迅速的；生机勃勃的 [ a burgeoning market ] n. 萌芽嫩枝 See the vivid/vibrant green鲜绿 burgeon of that pot plant 看那个盆栽的鲜绿的萌芽 vi. Literal meaning: (plant, tree) 发芽; figurative meaning: (像萌芽一样) 迅速生长/发展 If sth burgeons, it grows, flourishes, or develops rapidly. (像萌芽一样) 迅速生长/发展  e.g. Plants burgeon from every available space. 植物能从任何可获得的空间中发芽,迅速生长。 E.g. My confidence began to burgeon later in life. 我的信心到了晚年开始 迅速增长 e.g. The brain-drain effect 人才外流现象of studying abroad has started to burgeon due to flaws in the domestic academic environment. Last year, more than ten thousands of high-caliber['haikælibə] IT engineers have applied for emigration. 人才外流的现象 已经(像萌芽一样) 迅速生长/发展  E.g. The seed of friendship and cooperation that we sow 播种[səu] today will burgeon, blossom, and harvest in the future and China-US partnership of cooperation will definitely enjoy a better tomorrow 我们播下的友好合作种子一定能够(像萌芽一样) 迅速生长/发展、开花, 结果 |

|  |  |
| --- | --- |
| Ingest  V.S.  digest | Technical word /ɪnˈdʒɛst/  [ɪn'dʒest]    1.[V-T](javascript:;) ingest: to take food or other substances into your body; when animals or plants ingest a substance, they take it into themselves, by eating or absorbing it. 摄取; 吸收(食物,药,营养); 吃了(食物,药,营养) RELTD [DIGEST](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=digest)  **[ ingest food; ingest medicines; ingest drugs; ingest nutrition]**  e.g. ...side effects occurring in fish that **ingest this substance.**   ...在 吃了此物质 的鱼身上产生的副作用。  e.g. The **pharmaceutical industry/ˌfɑːməˈsjuːtɪkəl/** uses chemistry, the study of the structure of substances and how they combine with or react to one another, to create medicines that fight these germs. **Ingesting medicine** follows the same technical principle as putting sugar into coffee to make it sweet. Like the sugar **dissolving** in this cup of coffee, when we **ingest drugs,** the compounds **dissolve** into our bloodstream for the effect of fighting off disease-causing pathogens(/ˈpæθəˌdʒɛn/any organism that can cause disease in a person, animal, or plant. 病原体any organism that can cause disease in a person, animal, or plant. 病原体).  2. [N-UNCOUNT](javascript:;) => ingestion n /ɪnˋdʒɛstʃən ; ɪn'dʒestʃən / [U]  e.g.  Every **ingestion of food** can affect our mood or thinking processes.  每次 **食物的摄取** 都可能会影响我们的情绪或思维过程。  e.g. **Ingestion of nutrition** plays an important role in our body **metabolism**.　**营养的摄取／吸收** 对新陈代谢有很重要的作用. |
| digest  1.[V-T/V-I](javascript:;)When food digests or when you digest it, it passes through your body to your stomach. Your stomach removes the substances that your body needs and gets rid of the rest. 消化  •  Do not undertake strenuous exercise for a few hours after a meal to allow food to digest.  •  She couldn't digest food properly. 　 她无法正常消化食物。  2.[V-T](javascript:;)If you digest information/absorb information, you think about it carefully so that you understand it. 领会  •  They learn well and quickly but seem to need time to **digest information**.  需要时间来吃透这些知识。  3.[V-T](javascript:;)**If you digest some unpleasant news, you think about it until you are able to accept it and know how to deal with it. 承受 (坏消息)**  •  All this (bad news) has upset me. **I need time to digest it all.**  我需要时间来 **承受(坏消息)**。  4.[N-COUNT](javascript:;)A digest is a collection of pieces of writing. They are published together in a shorter form than they were originally published. 文摘  •  ...the Middle East Economic Digest.  …中东经济文摘。 |

|  |
| --- |
| 病原体patho**gen** /ˈpæθəˌdʒɛn/: A pathogen is any **organism** (any living thing) that can cause disease in a person, animal, or plant. |
| 过敏源aller**gen** /ˈæləˌdʒɛn/: An allergen is a substance that causes an allergic reaction in someone.  (have allergy to sth; be allergic to sth ) |
| 光合作用; 光能合成photosynthesis /ˌfəʊtəʊˈsɪnθɪsɪs/: is the way that green plants make their food using sunlight; turning sunlights to food; causing carbon dioxide to become oxygen that is an **indispensable** element in our life.  V.S. metabolism /m**ɪˈtæbə**ˌlɪzəm/; metabolic /,metə'**bɒ**lɪk]  Your metabolism/m**ɪˈtæbə**ˌlɪzəm/ is the way that chemical processes in your body cause food to be used in an efficient way, for example to make new cells and to give you energy. 新陈代谢  e.g.  If you skip breakfast, your metabolism slows down. 新陈代谢速度会减慢。 |

Table: 溶质; 溶剂; 溶解

|  |  |
| --- | --- |
| n [化学] 溶质, 被溶解的物质 adj. 溶解的 | solute ['sɔlju:t] 溶质 V.S. solvent ['sɑlvənt]溶剂 : the component of a solution溶液 that changes its state in forming the solution or the component that is not present in excess; the substance that is dissolved(使溶解 in another substance, for example, the salt(solute) is dissolved in water (solvent). e.g So what are vitamins ['vɪtəmɪn,]? Well, the dictionary tells us they are food factors essential in small quantities to maintain life. Now, there are fat soluble vitamins which can be stored for quite some time by the body and there are water soluble vitamins which are removed more rapidly from the body and so a regular daily intake摄入 of these ones is needed. // solution: 溶液A solution is a liquid in which a solid substance has been dissolved(使溶解). |
| n 溶剂; 有偿债能力的 | solute ['sɔlju:t] 溶质 V.S. solvent ['sɑlvənt]溶剂 2. A solvent溶剂 is a liquid that can dissolve溶解 other substances, aka, the solute溶质. E.g. The salt(solute) is dissolved in water (solvent). E.g. The sugar (solute溶质) cannot be dissolved in alcohol (solvent溶剂). |
| (公司/个人)有偿债能力的 sb/ company is solvent = If a person or a company is solvent, they have enough money to pay all their debts. e.g. Ukrain, a debt-ravaged nation, is not solvent to pay all their debts that were borrowed from U.N as financial bailout. ... e.g. They're going to have to show compelling evidence to the bank that the company is now solvent. 公司现在是具备偿债能力的。 //强有力的可以说服别人的证据 compelling evidence; 强有力的可以说服别人的原因 compelling reason; 强有力的可以说服别人的理由 compelling justification; // war-torn country/nation/city = war-ravaged nation/country/city 被战争摧残的国都； 负债累累的国家/sb: an indebted nation; an indebted person. |
| 可溶解的 | solute => 可溶解的 soluble /ˈsɒljʊbəl/: (of a substance) capable of being dissolved使溶解 in some solvent (liquid, usually water溶剂) e.g. Uranium is soluble in sea water. 铀可在海水中溶解。 2. If something is water-soluble or fat-soluble, it will dissolve in water or in fat. 水溶性的; 脂溶性的 eg. The red dye on the leather is water-soluble. 皮革上的红色染料是水溶性的 |
| 一种含盐溶液 | **[ a saline solution 一种含盐溶液/ˈseɪlaɪn/ ]**  [**acid solution**酸性的溶液 V.S. **alkaline solution['ælkə'laɪn]碱性的溶液]**  e.g. A mildly **acid solution**酸性的溶液has been added to one set of seeds. Here, **we can say to a high degree of certainty that** higher acidity is bad for **germination**, as the presence of white radicals is significantly higher in the control set.  e.g. A saline /ˈs**eɪl**aɪn/ solution**含盐溶液** has been added to one set of seeds, with the **hypothesis that** increased salinity could lead to more rapid germination. Right now, a higher level of salinity [sə'lɪnəti] may still lead to faster germination, but it's too early to be sure.  // saline /ˈs**eɪl**aɪn/ A saline substance or liquid contains salt. 含盐的; salinity [səˈlɪnətɪ] n. 盐度；盐分；盐性 |
| vt. 使溶解；使分解；使液化 vi. 溶解；解散；消失 n. 叠化画面；画面的溶暗 | dissolve [dɪ'zɑlv] sth = sth (solute溶质) is dissolved in particular liquid, such as water or liquid (aka, **solvent)** 溶剂， n)溶解 dissolution: [,dɪ**sə**'luʃən]  e.g. e.g. The **pharmaceutical industry/ˌfɑːməˈsjuːtɪkəl/** uses chemistry, the study of the structure of substances and how they combine with or react to one another, to create medicines that fight these germs. **Ingesting medicine** follows the same technical principle as putting sugar into coffee to make it sweet. Like the sugar **dissolving** in this cup of coffee, when we **ingest drugs/ɪnˈdʒɛst/,** the compounds **dissolve** into our bloodstream for the effect of fighting off disease-causing pathogens(/ˈpæθəˌdʒɛn/any organism that can cause disease in a person, animal, or plant. 病原体any organism that can cause disease in a person, animal, or plant. 病原体). |
| 脂溶性维生素 v.s. 水溶性维生素 | fat soluble vitamin V.S. water soluble vitamin ['vɪt**ə**mɪn,] |
| [物化] 催化剂；刺激因素 | catalyst:   1. (chemistry) a substance that **initiates or accelerates/speeds up** a chemical reaction without itself being affected   2. something that causes**, stimulate, pique, spur** an important event to happen 刺激因素 (v.s. 兴奋剂；刺激物；酒精饮料: stimulant)  eg However, forgiveness is a powerful catalyst催化剂, and is one of the most loving actions you can take for yourself.  e.g. Russia will not compete at next month's Paralympic Games in Rio. Russia has **lodged an appeal against** **正式提出上诉**the **blanket ban** that was imposed by Paralympics officials, however, the appeal was rejected Tuesday. The Court for **the Arbitration仲裁** of Sport upheld/supported the decision following allegations of state-sponsored **doping兴奋剂**. "We hope this decision acts as **a catalyst** for change in Russia and we can welcome the Russian Paralympic Committee back as a member safe in the knowledge that it is **fulfilling its obligations** to ensure fair competition for all.    **//正式提出 (投诉、抗议、指控、要求)** If you **lodge a complaint (against xxx)正式提出 投诉**, lodge a protest, **lodge a claim (against xxx)** (正式)提出索赔, **lodge an appeal against** xxx 正式提出上诉**, lodge an accusation against sb.** 对…提出(正式) 控告, you officially and formally bring it out |
|  |  |

## elecetricity related

|  |  |
| --- | --- |
| 电荷 | **[ electrical charge ]**: **positive** electrical charge V.S. **negative** electrical charge   * 电子 [ɪ'lektrɒn] electron: An electron is a tiny particle of matter that is smaller than an atom and **has a negative electrical charge(电荷).** * 质子['prəʊtɒn] proton: is an atomic particle that has a **positive electrical charge(电荷).** |
| n. 电子 | n. 电子 [ɪ'lektrɒn] electron: An electron is a tiny particle of matter that is smaller than an atom and **has a negative electrical charge(电荷).**  •  Most things are balanced - with equal numbers of electrons and protons.   大部分物体都是电荷平衡的——含等量的电子和质子 |
| [物] 质子 | [物] 质子['prəʊtɒn] proton: is an atomic particle that has a **positive electrical charge(电荷).** |
| [词条图片](javascript:;) | ['pɑːtɪk(ə)l] particle    1.**A particle of something** is a very small piece or amount of it. 微粒; 极小量  •  ...a particle of hot metal  …热金属微粒。  •  There is **a particle of** truth in his statement.   在他的声明中只有极少的事实。  2. [N-COUNT](javascript:;)In physics, a particle粒子 is a piece of matter smaller than an atom such as an electron电子 [ɪ'lektrɒn] or a proton质子['prəʊtɒn].  •  ...the sub-atomic particles that make up matter …构成物质的次原子微粒。 |
| n. 原子 | n. 原子 ['ætəm] atom: is the **smallest** amount of a substance that can take part in a chemical reaction.  •  ...the news that Einstein's former colleagues Otto Hahn and Fritz Strassmann had split the atom.   …爱因斯坦的前同事奥托·哈恩和弗里茨·斯特拉斯曼曾分裂了原子的消息。 |

## (Part 1) Science

Science is all around/**ubiquitous( [juː'bɪkwɪtəs] seem to be everywhere).** Think about it-the computer you’re using, the medicine (orthodox or alternative medicines) you take when you’re sick, the grass, trees and plants outside your window. They’re all science.

Science is **a collective term** for a wide range of different studies. But **generally**, it can be broken down/split into three main areas: biology, chemistry, and physics.

**## biology, a branch of science**

Biology is the study of all **organisms**, that is all living things. From this branch of science, we have learned how plants and trees use **photosynthesis** to turn sunlight into food, and how this action causes **carbon dioxide** (CO2) to become the oxygen that is **indispensable (absolutely essential)** in our lives.

Biology has taught us about the human body and why it gets sick. For example, the idea of germs only **came into existence/came into play** because of this branch of science. **Not only** **can** (倒装句)we see what these tiny viral and bacterial agents look like under the microscope, but we also now understand how they attack healthy human cells. Simply speaking, this discovery is a good example of how the different branches of science can overlap.

**## Chemistry, a branch of science**

The **pharmaceutical industry/ˌfɑːməˈsjuːtɪkəl/** uses chemistry, the study of the structure of substances and how they combine with or react to one another, to create medicines that fight these germs. **Ingesting medicine** follows the same technical principle as putting sugar into coffee to make it sweet. Like the sugar **dissoving** in this cup of coffee, when we **ingest drugs,** the compounds dissolve into our bloodstream for the effect of fighting off disease-causing pathogens(/ˈpæθəˌdʒɛn/any organism that can cause disease in a person, animal, or plant. 病原体)

**// ingest**: to take food or other substances into your body; when animals or plants ingest a substance, they take it into themselves, by eating or absorbing it. 摄取; 吸收(食物,药,营养); RELTD [DIGEST](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=digest)

**## Physics**

Physicas, the third main branch of science, is the study of physical objects and the natural forces that affect them, such as traction or gravity, the force that keeps everything on Earch instead of floating off into outer space/atmosphere.

The reason why the computer and the lights are working right now is because of our understanding of physics, more particularly, the discovery of electricity, and how to transfer electrical power, in the forms of **electrons**, from one point to another.

It’s fair to say that this knowledge was the **catalyst** for a whole host of inventions, from the lightbulb to the television, from the computer to every new gadget you can buy in shops today.

**## Conclusion**

**To sum up/In summary/In conclusion,** science really is everywhere/**ubiquitous[juː'bɪkwɪtəs].** **Thanks to** science, people live longer and heathier lives and enjoy more entertaining lifestyles.

## (Part 2)Branches of science

Listen to the university lecturer. Group the study subjects under their respective branches of science. Be careful: there are some that do not fit into any of the four categories.

|  |
| --- |
| The five main branches of science are mathematics, physical science, earth science, life science and Social Science .   * Mathematics focuses on the relationships between things that can be measured. Its four fields are arithmetic , algebra, geometry and calculus. * Physical science looks at the nature of matter and energy, and tries to explain the physical behavior of the universe. Its three areas are physics, chemistry and astronomy. * Earth science looks at our planet’s structure and composition, and studies the physical processes that have shaped it. Its five categories are geology, Geography , atmospheric science, oceanography and paleontology. * Life science covers the study of all living things. Its five areas are biology, botany, zoology, physiology and ecology. * Social science explores human society and behavior. Its three fields are sociology, psychology and anthropology . |



## Lexical\_StudySubjectsInUniversity

Then copy to Unit 4 Training and education.docx (C:\Tracy\TW related\English\IETLS\oral topic\2 EF oral topics - Script based on Level\EF L14)

| Branch of science | Details |
| --- | --- |
| Mathematics | |  |  | | --- | --- | | arithmetic | arithmetic /əˈrɪθm**ə**tɪk/  1.[N-UNCOUNT 不可数名词](javascript:;)Arithmetic is the part of mathematics that is concerned with the **addition, subtraction, multiplication[,mʌltɪplɪ'keɪʃ(ə)n], and division of numbers**. 算术  •  ...teaching the basics of reading, writing and arithmetic.  …教授读、写、算的基本知识。  2. [N-UNCOUNT](javascript:;)You can use arithmetic to refer to the process of doing a particular sum or calculation. 计算  •  4,000 women put in ten rupees each, which if my arithmetic is right adds up to 40,000 rupees.   4千名妇女每人交10卢比，如果我的计算准确的话加起来总共是4万卢比。  3.  [N-UNCOUNT](javascript:;)If you refer to the arithmetic of a situation, you are concerned with those aspects of it that can be expressed in numbers, and how they affect the situation. (某形势的) 数据  •  The arithmetic was discouraging. In less than two months, they had used up six months' worth of food.   数据不容乐观。在不到两个月里，他们已经吃完了6个月的食物。 | | algebra | algebra /ˈældʒɪbrə/ Algebra is a type of mathematics in which letters are used to represent possible quantities. 代数 | | geometry | geometry  /dʒɪˈɒmɪtrɪ/     1.[N-](javascript:;) Geometry is the branch of mathematics concerned with the properties and relationships of lines, angles, curves, and shapes. 几何学  •  ...the very ordered way in which mathematics and geometry describe nature.  …数学和几何学描述自然的条理性。  2.N- The geometry of an object is its shape or the relationship of its parts to each other. 几何图形; 几何结构  •  ...the geometry of the curved roof.   …几何图形的弧形房顶。 | | calculus | calculus /ˈkælkjʊləs/ Calculus is a branch of **advanced mathematics** which deals with **variable quantities**. 微积分学 | |
| Physical science | |  |  | | --- | --- | | chemistry | chemistry /ˈkɛmɪstrɪ/; chemist  1. Chemistry is the scientific study of the structure of substances and of the way that they react with other substances. 化学  2. The chemistry of an organism or a material is the chemical substances that make it up and the chemical reactions that go on inside it. 化学成分; 化学反应  •  We have literally altered the chemistry of our planet's atmosphere.  我们实际上改变了地球大气层的化学成分。  3. If you say that there is chemistry between two people, you mean that it is obvious they are attracted to each other or like each other very much. (彼此间的) 吸引  •  ...the extraordinary chemistry between Ingrid and Bogart.  …英格丽德和博加特之间强烈的相互吸引。 | | astronomy | astronomy /əˈstrɒnəmɪ/ Astronomy is the scientific study of the stars, planets, and other natural objects in space. 天文学 | | physics | physics /ˈfɪzɪks/: Physics is the scientific study of forces such as heat, light, sound, pressure, gravity, and electricity, and the way that they affect objects. 物理学  •  ...the laws of physics.  …物理学定律。 | |
| Life science | |  |  | | --- | --- | | botany | botany /ˈbɒtənɪ/ Botany is the scientific study of **plants, esp the flora植物**学  botanical /ˌbəˈtænɪkəl/ [ADJ](javascript:;)Botanical books, research, and activities relate to the scientific study of **plants**. 植物学的  [[**botanical extracts**](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=Botanical%20Extracts&lang=en)**植物提取物; 物萃取精华;** [**botanical garden**](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\result.html?keyword=botanical%20garden&lang=en)**植物园**]  e.g.  The area is of great botanical interest.  该地区很有植物学研究价值。 | | flora /ˈflɔːrə/: You can refer to plants as flora, especially the plants growing in a particular area. (尤指某个地区的) 植物群  •  ...the variety of food crops and flora which now exists in Dominica.   …目前存在于多米尼加的各种粮食作物和植物群  **[ flora and fauna: 植物群和动物群]** /ˈfɔːnə/ Animals, especially the animals in a particular area, can be referred to as fauna. (尤指某区域的) 动物群]  •  ...the flora and fauna of the African jungle.  …非洲丛林的植物群和动物群 | | Biology | Biology is the science which is concerned with the study of **living things/organisms**. 生物学 | | ecology | ecology /ɪˈkɒlədʒɪ/ ; ecological  [**iːkə**'lɒdʒɪk(ə)l;]   1. Ecology is the study of the relationships between **plants/flora**, animals/**fauna(/ˈfɔːnə/)**, people, and their environment, and the balances between these relationships. 生态学 •  ...a professor in ecology.  …一位生态学教授。 2. [N-VAR](javascript:;)When you talk about **[the ecology of a place],** you are referring to the pattern and balance of relationships between plants, animals, people, and the environment in that place. **(一个地方的)生态**  e.g.  **...the ecology of** the rocky Negev desert in Israel. 沙漠生态。 | | zoology | zoology [zuː'ɒlədʒɪ; zəʊ-]  1.Zoology is the scientific study of animals/ **fauna(/ˈfɔːnə/)**. 动物学  // **fauna** :/ˈfɔːnə/ Animals, especially the animals in a particular area, can be referred to as fauna. (尤指某区域的) 动物群]  2.动物学的 zoological /[,z**uːə'**lɒdʒɪk(ə)l/  ...zoological specimens.  …动物学标本。 | | physiology | physiology /ˌf**ɪzɪ**ˈɒlədʒɪ/; physiological[,fɪ**zɪə**'lɒdʒɪkəl]     1. Physiology is the scientific study of how people's and animals' bodies function, and of how plants function. 生理学  •  ...the Nobel Prize for Medicine and Physiology.  …诺贝尔医学和生理学奖。  2.[N](javascript:;)The physiology of a human or animal's body or of a plant is the way that it functions. **生理机能** •  ...the physiology of respiration.  …呼吸的生理机能。  3. [ADJ](javascript:;)生理的 e.g...the physiological[,fɪ**zɪə**'lɒdʒɪkəl] effects of stress. …压力的生理影响。 | |
| Earth science | |  |  | | --- | --- | | oceanography | oceanography /ˌəʊ**ʃə**ˈnɒɡrəfɪ/  1. Oceanography is the scientific study of sea currents, the ocean floor, the sea bed, and the fish and animals/**fauna** that live in the sea. 海洋学  2. an **oceanographer**海洋学家 working on an environmental protection programme.  ...一位正在制定环境保护计划的 海洋学家。 | | archaeology | archaeology /ˌ**ɑː**kɪˈɒlədʒɪ/; **archaeological**/,ɑ:**kiə**'lɔdʒikəl/  1.Archaeology is the study of the societies and peoples of the past by examining the remains of their buildings, tools, and other objects. 考古学  2. 考古学的 **archaeological**/,ɑ:**kiə**'lɔdʒikəl/  ...one of the region's most important **archaeological**/,ɑ:**kiə**'lɔdʒikəl/   sites. | | **paleon**tology | [,p**ælɪɒn'**tɒlədʒɪ] **paleon**tology n. 古生物学, 研究化石的化石学the study of fossils (= ancient bones, plants etc that have been preserved in rock )  [词条图片](javascript:;) | | geology | geology /dʒɪˈɒlədʒɪ/  1.Geology is the study of the Earth's structure, **texture**质地, surface, and origins. 地质学•  He was visiting professor of geology at the University of Georgia.  2.地质学家 **Geologists** have studied the way that heat flows from the earth.  地质学家们已经研究了热量从地表流出的方式。  3.The geology of an area is the structure of its land, together with the types of rocks and minerals that exist within it. 地质状况  •  ...the geology of Asia.  …亚洲的地质状况。 | | geography | geography /dʒɪˈɒɡrəfɪ/    1. Geography is the study of the countries of the world and of such things as the land, seas, climate, towns, and population. 地理学  2. The geography of a place is the way that features such as rivers, mountains, towns, or streets are arranged within it. 地形  •  ...policemen who knew the local geography.   …了解当地地形的警察们。 | | atmospheric science | atmospheric science **[气象] 大气科学** | |
| Social science | |  |  | | --- | --- | | anthropology | anthropology /ˌænθrəˈpɒlədʒɪ/  1.Anthropology is the scientific study of people, society, and culture. 人类学  2.人类学家  ...an **anthropologist [,ænθrə'pɒlədʒɪst]** who had been in China for three years.  …一位在中国呆过3年的人类学家。 | | sociology | **soci**ology /ˌsəʊ**sɪˈ**ɒlədʒɪ/; **sociological  [,**səʊ**sɪə'**lɒdʒɪkə**l]**     1.Sociology is the study of society or of the way society is organized. 社会学  2.[ADJ](javascript:;)社会学的 e.g Psychological/ˌs**aɪkə**ˈlɒdʒɪkəl/ and **sociological  [,**səʊ**sɪə'**lɒdʒɪkə**l]** studies were emphasizing the importance of the family.  心理学和社会学研究都在强调家庭的重要性。 | | psychology | psychology /saɪˈkɒlədʒɪ/; psychological /ˌs**aɪkə**ˈlɒdʒɪkəl/  1. Psychology is the scientific study of the human mind and the reasons for people's behaviour. 心理学 •  ...Professor of Psychology at Haverford College. …海沃福德学院的心理学教授。  2. The psychology of a person is the kind of mind that they have, which makes them think or behave in the way that they do. 心理 •  ...a fascination with the psychology of murderers.   …对谋杀犯心理的强烈兴趣。  3. psychological /ˌs**aɪkə**ˈlɒdʒɪkəl/  e.g Psychological/ˌs**aɪkə**ˈlɒdʒɪkəl/ and **sociological [,**səʊ**sɪə'**lɒdʒɪkə**l]** studies were emphasizing the importance of the family.  心理学和社会学研究都在强调家庭的重要性。  V.S. physiology /ˌf**ɪzɪ**ˈɒlədʒɪ/ is the scientific study of how people's and animals' bodies function, and of how plants function. 生理学 | |
|  |  |

# MP3 STOP

## Zoological/,z**uːə**'lɒdʒɪk(ə)l/ classification 动物的分类

Read the overview to a chapter on **zoological [,zuːə'lɒdʒɪk(ə)l] classification动物的分类.**

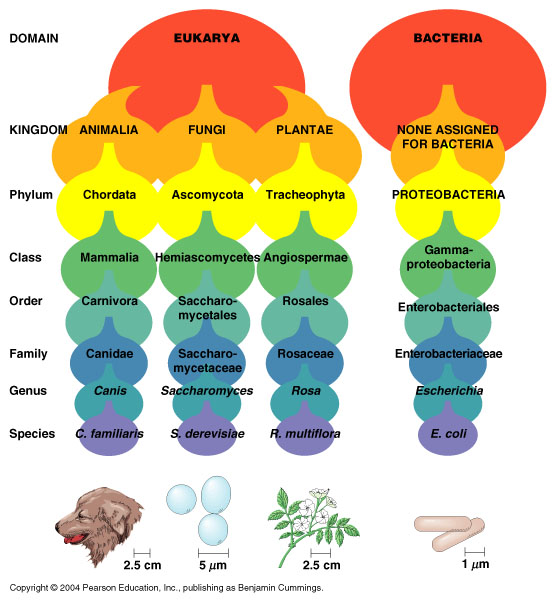
In zoology, a standard **taxonomic [,tæksə'nɑmɪk] classification system** is used to help differentiate all animals into a hierarchy of sets and subsets that become increasingly specific.

// N) taxonomy /'tæk'sɔnəmi/ 分类学Taxonomy is the process of naming and classifying things such as animals and plants into groups within a larger system, according to their similarities and differences. (动植物等的)分类法; 分类学; adj) taxonomic: **[,tæksə'nɑmɪk]**

* The highest and least specific rank of this **pyramidal/pɪˈræmɪdəl/ structure** is called the **kingdom**, while
* The lowest and most specific rank is called the **species**.
* In between are five other major ranks, which in order from highest to lowest are **phylum, class, order, family and genus**.

The following bullet points briefly define each rank:

|  |  |
| --- | --- |
| Rank of the pyramidal/**ˈræmɪdəl/** structure | Details |
| Highest and least specific (most general) | The highest and least specific rank of this **pyramidal/pɪˈræmɪdəl/ structure** is called the **kingdom. Kingdom: t**his rank groups together all the world’s animals. e.g. Kingdom: animal |
| 1. Phylum /ˈfaɪləm/ | Phylum/ˈfaɪləm/ a major **taxonomic[,tæksə'nɑmɪk] division** of living organisms that contain one or more classes. An example is the phylum Arthropoda (insects, crustaceans, arachnids, etc, and myriapods) 门;  门（分类）；语系; phyla ['faɪlə] phylum的复数）  **Phylum** This rank groups together all animals that share the same body plan in the animal **kingdom**. Three common **phyla['faɪlə]** are chordates (vertebrates), mollusks (invertebrates) and arthropods (joint-legged invertebrates).     |  | | --- | | 脊索动物chordate (/ˈkɔːˌdeɪt/ )  1. [N](javascript:;)any animal of the phylum/ˈfaɪləm/ Chordata, including the vertebrates and protochordates, characterized by a notochord, dorsal tubular nerve cord, and pharyngeal gill slits 脊索动物  2.[ADJ](javascript:;)of, relating to, or belonging to the Chordata 脊索动物的) | | [无脊椎] 软体动物['mɒləsk] mollusks, e.g. squid, octopus['ɒktəpəs]章鱼 | | 节肢动物; 节肢动物门的无脊椎动物，包括甲壳纲、昆虫纲、蛛形纲和蜈蚣亚纲等  arthropod /ˈɑːθrəˌpɒd/: any **invertebrate** of the phylum Arthropoda, having jointed limbs, a segmented body, and an exoskeleton made of chitin. The group includes the crustaceans, insects, arachnids, and centipedes . | |
| 2 Class | **Class:**  This rank groups together all animals within the same **phylum/ˈfaɪləm/** that share certain defining physical characteristics. Three chordate classes are mammals (e.g. monkeys and giraffes), reptiles (e.g. crocodiles and lizards) and amphibians (e.g. frogs and toads), and certain defining characteristics of mammals, for example, are that they are warm-blooded and produce milk for their young. Similarly, two mollusk classes are cephalopods (e.g. squid and octopi) and gastropods (e.g. slugs and snails), which are differentiated in part by only the former being exclusively marine animals. Finally, two arthropod classes are arachnids (e.g. scorpions and spiders), which have eight legs, and insects (e.g. ants and bees), which have six.  e.g. Class: mammal |
| 3 Order | **Order:** This rank groups together all animals within the same **class** that share certain defining traits, such as dietary requirements. For the mammal class, for example, two animal orders include carnivores, defined by the fact that they are **meat-eaters**, and insectivores, defined by the fact that they are insect-eaters.  e.g. Order: carnivore |
| 4 Family | **Family:** This rank groups together all animals within the same order that share certain defining anatomical differences. For the carnivore class, for instance, two families are the Canidae (the dog family) and the Felidae (the cat family), which are differentiated in part by only the latter having retractable claws.  e.g. Family: felidae |
| 5 Genus | **Genus:** /ˈdʒiːnəs/ A genus is a class of similar things, especially a group of animals or plants that includes several closely related species. (尤指动植物的) 属  This rank groups together all animals within the same **family** that appear to be more closely related to one another. Among felids, for example, only members of the Panthera genus are able to roar.  e.g. Genus: panther |
| The lowest and most specific rank is called the **species**. | **Species**: This rank groups together all animals within the same **genus**/ˈdʒiːnəs/属 that will commonly mate to produce fertile offspring. The Panthera genus of the Felidae family, for instance, is made up of four species - namely, tigers, lions, jaguars and leopards.  e.g. Species: leopard/ˈlɛpəd/(is a type of large, wild cat. Leopards have yellow fur and black spots, and live in Africa and Asia. 豹) |

[](javascript:;)

## Three Elephant Species

|  |
| --- |
| https://cns2.ef-cdn.com/Juno/11/89/96/v/118996/Sci2.3.1_header.jpg |
| **The Three Elephant Species**  At present, there are three distinct elephant species in the world. These are the African bush elephant, the African forest elephant and the Asian elephant. The elephants of the Loxodonta genus are the African bush elephant and the African forest elephant. Therefore, they are known collectively as African elephants. Meanwhile, the elephants of the Elephas genus include the Asian elephant.  In terms of appearance, African elephants differ from Asian elephants in a number of ways. First and foremost, African elephants have ears that are noticeably larger than those of Asian elephants. Also, the average African elephant is less hairy than the average Asian one. Moreover, while the Asian elephant has a back that is convex in appearance, the African one has a back that is concave. Finally, among African elephants, both males and females have tusks, but among Asian elephants, it is only the males that have tusks.  The African bush elephant and the African forest elephant also have some differences in their appearance that help to distinguish them. First, the African forest elephant has a body that is usually rounder. Also, it has tusks that are thinner and straighter.  With regard to size and weight, the African bush elephant is the largest and heaviest of the three species. The male African bush elephant’s shoulder can reach a height of 13 feet off the ground and it can weigh up to 26,000 pounds. Second is the Asian elephant. The male Asian elephant’s shoulder can reach a height of over 11 feet tall and it can weigh up to 12,000 pounds. The African forest elephant is the smallest and lightest of the three species. The male African forest elephant’s shoulder stands at a height of about 10 feet off the ground and it can weigh up to 10,000 pounds.  Looking at habitat, all three species inhabit varying types of land. African bush elephant herds prefer to wander over the flat grasslands that are located south of the Sahara desert for food. On the other hand, the African forest elephant is predominantly found in the African rainforest. Last but not least, the Asian elephant likes to live not only in forests but also on the land that exists between forests and grasslands. |
|  |

## Classify a new species

You work at a renowned zoological[,z**uːə'**lɒdʒɪk(ə)l] institute and have received an email from your boss, Dr. Yamada, about a new species of bird.

new species of bird

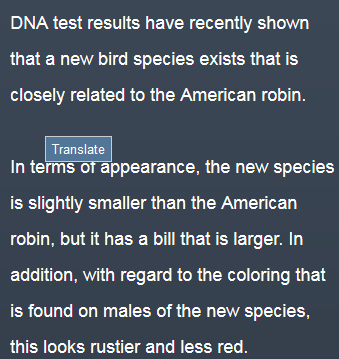
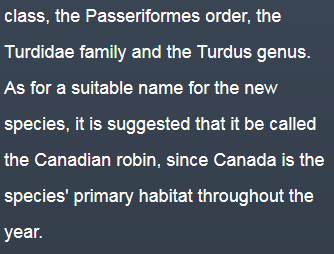
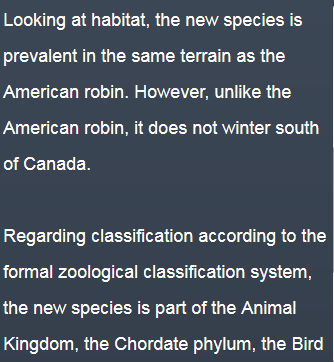
From

Dr.Yamada

Hello, everyone.  
  
I am writing to inform you about the exciting results of the DNA testing conducted on various flocks that were thought to be American robins.   
  
DNA test results show a new bird species closely related to the American robin.  
  
Appearance: slightly smaller but with a larger bill; coloring of the male looks rustier and less red.  
  
Habitat: prevalent in same terrain but, unlike American robin, doesn’t winter south of Canada.  
  
Classification: Animal Kingdom, Chordate phylum, Bird class, Passeriformes order, Turdidae family, Turdus genus & ‘?’ species.  
  
Best regards,  
  
Dr. Yamada

## Write: Classify a new species

Write a description, introducing the new bird species, comparing its appearance and habitat to that of the American robin, and classification using the formal **zoological[,zuːə'lɒdʒɪk(ə)l] classification system**. For the classification, suggest a name for the new species and say why it’s suitable.

## (Part 3) Scientific experiments

# MP3 STOP

## Lexical\_ToolsofAnExperiment

| Tools ofAnExperiment |  |
| --- | --- |
|  | (做细菌培养时用的)培养皿（皮氏培养皿） Petri dishes  Petri dish /ˈpɛtrɪ/: A Petri dish is a shallow circular dish that is used normally in chemical experiments in laboratories for producing groups of **microorganisms**; a small clear dish, esp glass dish, with a cover which is used by scientists, especially for growing bacteria 皮氏培养皿〔尤用作细菌培养的有盖玻璃碟〕  e.g. Place some **moist filter paper湿润的滤纸**in two **petri dishes.**  e.g. Place 10 seeds on top of **the filter paper** in each **petri dish**.  e.g. Add water to the **petri dishes** every 2 or 3 days. |
| [词条图片](javascript:;) | 纸箱；纸板盒cardboard box |
| [词条图片](javascript:;) | filter /ˈfɪltə/  1.[V-T](javascript:;)To filter a substance means to pass it through a device which is designed to remove certain particles contained in it. 过滤  => a filter is a device through which a substance is passed when it is being filtered. 过滤器  2.[V-I](javascript:;)If **[ light or sound filters into a place**], it comes in weakly or slowly, either through a partly covered opening, or from a long distance away. (光、声) 透入; 光照进了(xxx地方)  e.g.  **Light filtered into my kitchen** through the soft, green shade of the honey locust tree.  光线透过皂荚树柔和的绿荫照进了我的厨房。  =>A filter is a device through which **sound** or **light** is passed and which blocks or reduces particular sound or light frequencies. 滤声器; 滤光器  e.g.  You might use a yellow filter to improve the clarity of a hazy horizon. 你可以用一个黄色滤光器来提高模糊的地平线的清晰度。  3.[V-I](javascript:;)When **[ news or information filters through to sb.],** it gradually reaches them. (新闻、信息等) 逐渐传开, 传到某人那里  e.g.  It took months before the findings began to **filter through to the politicians**. 调查结果才开始 **逐渐传到<政治家们>那里**。  e.g.  News of the attack quickly **filtered through the college, and later to** the victims’ family袭击的消息很快就在这所大学传开了, 然后 **逐渐传到<家长>那里**  e.g. Few weeks after their divorce, the information finally **filters through to** their parents |
|  | N) 过滤 [fɪl'treɪʃ ə n] filtration: is the process of cleaning a liquid by passing it through a **filter**(a filter is a device through which a substance is passed when it is being filtered. 过滤器) |
|  | filter paper: a porous paper used for filtering liquids 滤纸 **[湿润的滤纸: moist filter paper; 一张咖啡滤纸:a coffee filter paper …]**  e.g. Place some **moist filter paper** in two **petri dishes**(做细菌培养时用的)培养皿**.**  e.g. Place 10 seeds on top of **the filter paper** in each **petri dish**(做细菌培养时用的)培养皿.  e.g. If **filtration** is necessary, heat the solution溶液 again without boiling, and filter while hot through the **moist filter paper**. |
|  | 密封容器airtight container  /ˈɛəˌtaɪt/ airtight  1.[ADJ](javascript:;)If a container is airtight, its lid(cover) fits so tightly that no air can get in or out; not allowing air to get in or out 气密的，密封的;  e.g.  Store the cookies in an airtight container.  把饼干存放在一个密封的容器里。  2.[ADJ](javascript:;)An **airtight alibi['ælɪbaɪ], plan, proposal, case, argument, or agreement** is one that has been so carefully put together that nobody will be able to find a fault in it; planned or done so carefully that there is no chance of finding any problems or mistakes, esp by rivals or competitors 万无一失的；无懈可击的(计划，行为)  **[ an airtight alibi['ælɪbaɪ] 无懈可击的 ”不在犯罪现场的证据”; an airtight investment proposal无懈可击的投资提案]**  e.g. He **had a perfect/an airtight alibi** and the police let him go. 他有完美的/无懈可击的”不在犯罪现场的证明”  // If you have an alibi**['ælɪbaɪ]**, you can prove that you were somewhere else when a crime was committed. 不在犯罪现场的证明 |
|  |  |

## Lexical\_VariablesofAnExperiment试验中的变量；可变因素

The aim of this ongoing experiment is to test how varying different environmental conditions - sunlight, salinity, acidity, oxygen and temperature - affect the germination of a seed.

| Variables ofAnExperiment | 试验中的变量；可变因素 |
| --- | --- |
| Sunlight | Sunlight: The first set of seeds has been placed under direct sunlight and the second under a **cardboard box**, and the lack of sunlight **might be having** a negative effect on the second set. This is because only some of the first set have started **germinating**. |
| [化学]酸度；酸性 | Acidity: A mildly **acid solution**酸性的溶液has been added to one set of seeds. Here, **we can say to a high degree of certainty that(we can say with confidence that/we can be quiet certain that)**  higher acidity is bad for **germination**, as the presence of white radicals is significantly higher in the control set.  acid /ˈ**æ**sɪd/   1. [N-MASS 集合名词](javascript:;)An acid is a chemical substance, usually a liquid, which contains hydrogen and can react with other substances to form salts. Some acids burn or dissolve other substances that they come into contact with. [化学]酸 2. [ADJ](javascript:;)An acid substance contains acid. [化学] 酸性的 •  These shrubs must have an acid, lime-free soil.   这些灌木必须要有酸性、无石灰的土壤。 3. N) [**ə**'sɪdɪtɪ] acidity; acidities [化学]酸度；酸性 V.S. [,ælkə'lɪnətɪ] alka**linity** n. [化学] 碱度; 碱性   n. 酸度；酸性；酸过多；胃酸过多 the acidity of rainwater  …雨水的酸性。 e.g. (我们可以肯定xxx) **We can be quite certain that (we can say with confidence that)** the higher acidity is bad for **germination**. // If a seed **germinates** or if it is germinated, it starts to grow. 使发芽; 发芽 e.g.  A pH test measures **the acidity or alkalinity** [,ælkə'lɪnətɪ] of a substance.  pH测验检测的是物质的酸度或碱度  V.S.  sour: having a sharp acid taste, like the taste of a lemon or a fruit that is not ready to be eaten 酸的，酸味的 |
| [化学] 碱度；[化学] 碱性 | alkaline /ˈælkəˌlaɪn/; [,ælkə'lɪnətɪ] alka**linity** n. [化学] 碱度；[化学] 碱性   1. [ADJ](javascript:;)Something that is alkaline contains an alkali or has a pH value of more than 7. 含碱的; 碱性的 e..g.  Some soils are actually too alkaline for certain plant life.  有些土壤的碱性，实际上对某些植物的生长是过高的。 2. [N-UNCOUNT](javascript:;) [,ælkə'lɪnətɪ] alka**linity** n. [化学] 碱度；[化学] 碱性  e.g.  A pH test measures **the acidity or alkalinity** of a substance.  pH测验检测的是物质的酸度或碱度。   **[ə'sɪdɪtɪ] acidity [化学]酸度；酸性 V.S. [,ælkə'lɪnətɪ] alkalinity  n. [化学] 碱度;碱性** |
| 盐度；盐分；盐性 | Salinity: A saline /ˈs**eɪl**aɪn/ solution**含盐溶液** has been added to one set of seeds, with the **hypothesis that** increased salinity could lead to more rapid germination. Right now, a higher level of salinity [sə'lɪnəti] may still lead to faster germination, but it's too early to be sure.  [səˈlɪnətɪ] salinity [sə'lɪnəti] n. 盐度；盐分；盐性 adj. 盐的；含盐分的 n. 盐湖；碱盐泻药  saline /ˈs**eɪl**aɪn/ A saline substance or liquid contains salt. 含盐的 **[ a saline solution 一种含盐溶液]** |
| Temperature | Temperature (use a thermometer /θəˈmɒmɪtə/ to measure the temperature. A 温度计thermometer is an instrument for measuring temperature. It usually consists of a narrow glass tube containing a thin column of a liquid which rises and falls as the temperature rises and falls.)  Temperature: The first set of seeds has been left at room temperature and the second has been placed in the fridge, with the **hypothesis** that a lower temperature may cause the process of **germination** to slow down. It's too early to tell right now **though**.    e.g. We **hypothesize[haɪ'pɑθəsaɪz] that** a lower temperature may slow germination发芽 down. //N) hypothesis [haɪ'pɑθəsɪs] |
| [ degree of oxygen] | Oxygen: One set of seeds has been placed inside an airtight container and we might expect that, due to a lack of oxygen, the germination rate for this set will be less than the control set. In this case, we can also say with confidence that our initial hypothesis is correct.  e.g. (我们可以肯定xxxx) **We can be quiet certain that/We can say with confidence that** a lack of oxygen slows germination发芽 down.  // If a seed germinates or if it is germinated, it starts to grow. 使发芽; 发芽 |
|  |  |

Germination occurs when at least one **white radical???** emerges from a seed.

Test the effect of **salinity ???** by treating one of the dishes with a **saline ???**solution.

Place one of the dishes in the fridge to test the effect of temperature.

## Scentific experiement guidelines

Equipment and process of an experiment. The scientist outlines an experiment he's doing on how the changes in light, salinity, acidity, oxygen and temperature affect the germination of seeds.

|  |
| --- |
| **Experiment guidelines**  Objective The aim of the experiment is to test how different environmental conditions affect the germination of a seed.  Steps 1. Soak 20 seeds in water overnight. 2. Place some moist filter paper in two petri dishes. 3. Place 10 seeds on top of the filter paper in each dish. 4. Place one dish in a place exposed to bright sunlight and cover the other dish with a cardboard box. 5. Add water to the dishes every 2 or 3 days to ensure the filter paper stays damp. 6. After 14-18 days, count the number of seeds that germinated in each dish and convert this number into a percentage. (Germination occurs when at least one white radical, or root, emerges from a seed.) 7. Repeat the experiment, each time testing the effect of one variable at a time and keeping all other conditions constant. 8. Test the effect of salinity by treating one of the dishes with a saline solution. 9. Add a mild acidic solution to one of the dishes to test the effect of acidity. 10. Test the effect of oxygen by placing one of the dishes in an airtight container. 11. Place one of the dishes in the fridge to test the effect of temperature. |

## Grammar: express certainty

|  |  |
| --- | --- |
| **Degree of certainty** | **Idiomatic [,ɪdɪə'mætɪk] expression 习惯性的表达** |
| High | e.g. (我们可以肯定xxxx) **We can be quite certain that/quiet sure that** the higher acidity[ə'sɪdəti] is bad for **germination**. // If a seed **germinates** or if it is germinated, it starts to grow. 使发芽  e.g. (我们可以肯定xxxx) **We can say with confidence that/ We can be quiet certain that** a lack of oxygen slows **germination**发芽 down.  e.g. [to a high degree of certainty; we can say **to a high degree of certainty** that xxx]  e.g. Here, we can say **to a high degree of certainty** that higher acidity is bad for germination, as the presence of white radicals is significantly higher in the control set. |
| Middle | may still lead to  -  may cause  -  could lead to  -  might be having |
| Low |  |

Practice: Fill in the gaps with the words below.

may still lead to  -  may cause  -  could lead to  -  might be having  -  can say with confidence   -  to a high degree of certainty -  might expect

|  |
| --- |
| The aim of this ongoing experiment is to test how varying different environmental conditions - sunlight, salinity, acidity, oxygen and temperature - affect the germination of a seed.   Sunlight: The first set of seeds has been placed under direct sunlight and the second under a cardboard box, and the lack of sunlight might be having a negative effect on the second set. This is because only some of the first set have started germinating.   Salinity: A saline solution has been added to one set of seeds, with the hypothesis that increased salinity could lead to more rapid germination. Right now, a higher level of salinity may still lead to faster germination, but it's too early to be sure.   Acidity: A mildly acidic solution has been added to one set of seeds. Here, we can say to a high degree of certainty that higher acidity is bad for germination, as the presence of white radicals is significantly higher in the control set.   Oxygen: One set of seeds has been placed inside an airtight container and we might expect that, due to a lack of oxygen, the germination rate for this set will be less than the control set. In this case, we can also say with confidence that our initial hypothesis is correct.   Temperature: The first set of seeds has been left at room temperature and the second has been placed in the fridge, with the hypothesis that a lower temperature may cause the process of germination to slow down. It's too early to tell right now though. |

# STOP my study

|  |
| --- |
| germinate /ˈdʒɜːmɪˌneɪt/; germination      |TEM8 (germinatinggerminatedgerminates)  1.  [V-T/V-I](javascript:;)If a seed germinates or if it is germinated, it starts to grow. 使发芽; 发芽  •  Some seed varieties germinate fast, so check every day or so.   有一些品种的种子发芽快，所以差不多每天都要察看一下。  2.  [N-UNCOUNT](javascript:;)发芽  •  The poor germination of your seed could be because the soil was too cold.   你的种子发芽不好，可能是因为土壤太冷。  3.  [V-I](javascript:;)If an idea, plan, or feeling germinates, it comes into existence and begins to develop. 形成  •  ...a big book that was germinating in his mind.   …正在他脑中酝酿的一部大作。  1.  [I,T] if a seed germinates, or if it is germinated, it begins to grow  （使）发芽  [SYN](javascript:;) SPROUT  2.  [I] if an idea, feeling etc germinates, it begins to develop  〔想法、感觉等〕开始形成，萌发  •The idea of setting up his own company began to germinate in his mind. 他萌生了自己开公司的想法。  e.g. We can say with confidence that a lack of oxygen slows germination发芽 down.  e.g. We hypothesize[haɪ'pɑθəsaɪz] that a lower temperature may slow germination发芽 down. //N) hypothesis [haɪ'pɑθəsɪs] |
| sprout /spraʊt/      |CET6+ TEM4 (sproutingsproutedsprouts)  1.  [V-I](javascript:;)When plants, vegetables, or seeds sprout, they produce new shoots or leaves. (植物、蔬菜、种子) 发芽  •  It only takes a few days for beans to sprout.   豆子只需几天就会发芽。  2.  [V-I](javascript:;)When leaves, shoots, or plants sprout somewhere, they grow there. (叶子、芽、植株) 长出  •  Leaf-shoots were beginning to sprout on the hawthorn.   叶芽开始在山楂树上长出来。  3.  [V-T/V-I](javascript:;)If something such as hair sprouts from a person or animal, or if they sprout it, it grows on them. (人、动物) 长出 (毛发等); (毛发等) 长出来  •  She is very old now, with little, round, wire-rimmed glasses and whiskers sprouting from her chin.   她现在很老了，戴着小而圆的金属丝框眼镜，下巴长出了胡须。  4.  [N-COUNT](javascript:;)Sprouts are vegetables that look like tiny cabbages. They are also called brussels sprouts. 抱子甘蓝  1.  [I,T] if vegetables, seeds, or plants sprout, they start to grow, producing shoots , buds , or leaves  〔蔬菜、种子、植物〕发芽，抽芽；开始长出〔叶子〕  •Move the pots outside when the seeds begin to sprout. 种子开始发芽时把盆搬到外面去。  •Trees were starting to sprout new leaves. 树上开始抽出新叶。  2.  [I] to appear suddenly in large numbers  突然大量出现，大量冒出  •Office blocks are sprouting up everywhere. 到处都有办公大楼冒出来。  3.  [I,T] if something such as hair sprouts or if you sprout it, it starts to grow  〔头发等〕开始长出；〔某人〕开始长〔毛发等〕  •Jim seemed to have sprouted a beard. 吉姆好像长出胡子了。  sprout 2   n. [C ]  英  MEANINGS 义项  1.  a small green vegetable like a very small cabbage  球芽甘蓝  [SYN](javascript:;) BRUSSELS SPROUT especially BrE 【尤英】  [→ see picture at 见 vegetable 1](file:///C:\Users\IBM_ADMIN\AppData\Local\Youdao\Dict\Application\7.5.2.0\resultui\dict\?keyword=vegetable)  2.  a new growth on a plant  〔植物的〕苗；芽，嫩枝  [SYN](javascript:;) SHOOT  3.  [usually plural,一般用复数] an alfalfa seed which has grown a stem and is eaten  〔可食的〕苜蓿芽 |
| burgeon /ˈbɜːdʒən/ => burgeoning ['bə:dʒəniŋ] adj. 增长/发展迅速的；生机勃勃的 [ a burgeoning market ] n. 萌芽嫩枝 See the vivid/vibrant green鲜绿 burgeon of that pot plant 看那个盆栽的鲜绿的萌芽 vi. Literal meaning: (plant, tree) 发芽; figurative meaning: (像萌芽一样) 迅速生长/发展 If sth burgeons, it grows, flourishes, or develops rapidly. (像萌芽一样) 迅速生长/发展  e.g. Plants burgeon from every available space. 植物能从任何可获得的空间中发芽,迅速生长。 E.g. My confidence began to burgeon later in life. 我的信心到了晚年开始 迅速增长 e.g. The brain-drain effect 人才外流现象of studying abroad has started to burgeon due to flaws in the domestic academic environment. Last year, more than ten thousands of high-caliber['haikælibə] IT engineers have applied for emigration. 人才外流的现象 已经(像萌芽一样) 迅速生长/发展  E.g. The seed of friendship and cooperation that we sow 播种[səu] today will burgeon, blossom, and harvest in the future and China-US partnership of cooperation will definitely enjoy a better tomorrow 我们播下的友好合作种子一定能够(像萌芽一样) 迅速生长/发展、开花, 结果 |

## Grammar: past passive 过去被动式

The following “past passive” phrases are used in the following article:

were placed  -  was carried  -  was put  -  was given  -  was conducted  -  was recorded  -  were treated  -  was added

## Results of the experiment

Report the results of the experient from the following aspects:

* Acidity
* Oxygen
* Salinity
* Sunlight
* Temperature
* humidity

In the first germination test, half the seeds were placed at a standard temperature. These seeds showed a germination rate of 90% after 14 days. In the second dish, placed at a temperature of 7.5°C, there was a delay in the onset of observable germination and an extended germination period. A final germination percentage of 60% was recorded for the experimental seeds and this was lower than in the control dish. As a result, we concluded that the lower temperature reduced seed germination.  
  
The second experiment was carried out at standard temperatures, but half the seeds were treated with saline solution. Mean germination times were significantly faster for the control dish, and final germination percentages of 90% compared to 70% were also higher for the control dish. Therefore, we concluded that the saline solution resulted in a lower rate of germination.  
  
Experiment 3 was conducted at standard temperatures, but a mildly acidic solution was added to one of the petri dishes. The control dish reached a considerably higher germination percentage than the experimental dish (80% to 40%, respectively), allowing us to conclude that acidity had a negative effect on plant growth.  
  
Experiment 4 was also conducted at standard temperatures, but one of the petri dishes was put in an airtight container. Once again, the control dish reached a considerably higher germination percentage than the experimental dish (90% to 50%, respectively). This allowed us to conclude that a lack of oxygen negatively impacted plant growth.  
  
The final germination test was run at standard temperatures, but the amount of sunlight exposure received by the dishes was varied. The control dish was placed in direct sunlight while the experimental dish was given no exposure to light. The control dish reached an 80% rate of germination while none of the experimental seeds reached germination. This proved that sunlight is essential for germination.

## Describe a scientific experiment

You are presenting an experiment process to test the effectiveness of three dishwashing detergents – Hammer, Plate Shine and Super Clean – at killing bacteria. Read the notes before describing the experiment. The presentation slide is your visual prompt/visual aid.

|  |
| --- |
| Experiment guidelines for testing bacteria-killing effectiveness  Objective The aim of this experiment is to test how effective a product is at killing off harmful bacteria.  Steps 1. Collect bacteria from the relevant surfaces (e.g. the floor) to test the product, using a sterile cotton swab.  2. Dip the cotton swab into a test tube containing sterile water so that the bacteria transfer from the swab to the water.  3. Pour this water onto a petri dish containing nutrients for bacterial growth.  4. Pour out excess water from the petri dish.  5. Dip a small piece of filter paper into the cleaning product being tested.  6. Place the filter paper in the center of the petri dish.  7. Leave the petri dish to stand for two days at varied temperatures while keeping other variables constant, so that an area free of bacteria forms between the filter paper and the bacteria colony.  8. After two days, measure the distance free of bacteria to gauge the effectiveness of the cleaning product (the greater the distance, the more effective the cleaning product). |

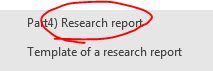
## Present your predicted findings based on your notes

|  |
| --- |
| Predicted findings:  • expect an area free of bacteria to form around the filter paper • the free area to vary from detergent to detergent • all detergents to be more effective at higher temperatures • different detergents may be more effective at different temperatures |

## (Part 4)Scientific report

## Template of a scientific report

Ref: see “how to write a research report” in Unit 6 Doing research.docx (C:\Tracy\TW related\English\IETLS\oral topic\2 EF oral topics - Script based on Level\EF L16)



|  |  |
| --- | --- |
| **Section** | **Brief Description** |
| Title | A short heading that conveys the main objective of the scientific report. |
| Abstract | A summary of the essential information contained within the scientific report. It is usually the most important section as it will determine whether or not the reader decides to read the whole report. |
| Table of Contents | A list of the broad contents of the scientific report. The arrangement of topics in the table should be as logical as possible. |
| Terms of Reference | Describe the purpose of the report, including aims and objectives, who it has been prepared for, and any limitations that existed in the scientific investigation. |
| Methodology | Explains how the scientific experiment was conducted, what equipment was used and the conditions under which the experiment was conducted. |
| Findings | Presents the results of the scientific investigation. As the main body of the report, it should be well structured and contain clear headings and numbers. |
| Conclusions | A summary of the results of the scientific report and the information that can be drawn from them. |
| Recommendations | Suggestions as to the specific courses of action that could or should be taken, based on the results of the report. |
| Acknowledgements  (thankful) | Where people and/or institutions who have contributed to the scientific investigation and/or report are officially thanked. |
| References | A list of other sources of information, such as theories or models, which have been used to help write the scientific report. |
| Appendix  appendices /əˈpɛndɪ**siːz**/ (the plural form of appendix) | Information that’s relevant to the scientific report. However, it needs to be kept separate from the main body of the report so as to avoid interrupting its line of thought and development. |

## Describe scientific relationships

**Intrinsic and climatic factors in North-American animal population dynamics  
  
By Nicolas Loeuille and Michael Ghil**

**Abstract**  
Extensive work has been done to identify and explain multi-year cycles in animal populations. Several attempts have been made to relate these to climatic cycles. We used advanced time series analysis methods to attribute cycles in several North-American mammal species to abiotic versus biotic factors. Our results show that all three climatic indices influence the animal-population dynamics: they explain a substantial part of the variance in the fur-counts and share characteristic periods with the fur-count data set. In addition to the climate-related periods, the fur-count time series also contain a significant three-year period that is, in all likelihood, caused by biological interactions.  
  
**Terms of Reference**The dynamics of animal populations are driven by both biotic and abiotic factors. Following the seminal work of Volterra [1], many models assume that direct interactions between species, such as predation, competition or mutualism, play a dominant role in population dynamics. The key role of such biotic factors need not exclude other potentially important processes. Abiotic factors that are likely to play a significant role in the dynamics of an animal community include the climatic, physical and chemical conditions in which the different populations live.  
  
This work aims at separating the influence of biotic and climatic factors in the dynamics of eleven North-American mammal populations. The animal species we studied were bear, beaver, fisher, fox, lynx, marten, mink, muskrat, otter, wolf and wolverine. The variations in these populations are determined by using the Hudson Bay Company's database of annual fur-counts [2].   
  
**Methodology**Four different data sets were analyzed. The first set includes fur-counts of the eleven animal populations within a given year. The three other sets were obtained by augmenting the fur records by one climatic record in each case. The three records we used were the North Atlantic Oscillation (NAO) index, the cold-season Nino-3 sea-surface temperatures (SSTs), and the mean surface-air temperature of the Northern Hemisphere.  
  
**Conclusions**Our two-step methodology led us to distinguish between intrinsic and external factors in the dynamics of over ten North American mammal populations. PC analysis shows that internal dynamics is most important but also captures the role of ENSO, NAO and NH temperatures in the animal population dynamics. The striking change in the amplitude of the oscillations present in our fur-count data is probably linked to an increase of hunting pressure over the century-long interval of study.  
  
**Acknowledgements**This work was initiated as part of a collaboration between the Ecole Normale Superieure and UCLA. We thank both institutions for their respective support and mutual hospitality. Our research was partially supported by a U.S. National Science Foundation grant to Michael Ghil.  
  
**References**1. Volterra, V: Variations and fluctuations in the number of individuals in cohabiting animal species: Mem Acad Lincei 1926, 2:31-11.  
  
2. Jones JW: Fur-Farming in Canada Ottawa: Commission of Conservation 1914.   
Allen M, Smith LA: Monte Carlo SSA: Detecting irregular oscillations in the presence of colored noise. J Climate 1996, 9:3373-3404.  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
The electronic version of this article is the complete one and can be found online at: https://cns2.ef-cdn.com/1472-6785/4/6  
© 2004 Loeuille and Ghil; licensee BioMed Central Ltd. This is an Open Access article: verbatim copying and redistribution of this article are permitted in all media for any purpose, provided this notice is preserved along with the article's original URL.

## Practice

Identify the phrases used in the report to describe scientific relationships. Fill in the gaps with the phrases below.

factors that can affect animal populations include  -  factors drive  -  influence animal population dynamics  -  assume the main factor affecting  -  relate animal populations to

1. Several attempts have been made by scientists to climatic cycles.   
  
2. The results of this investigation show that all three climatic indices considered .   
  
3. In general, both abiotic and biotic animal population dynamics.  
  
4. Many models animal populations is the direct interactions among different animal species.   
  
5. According to the report, abiotic climatic, physical and chemical living conditions.

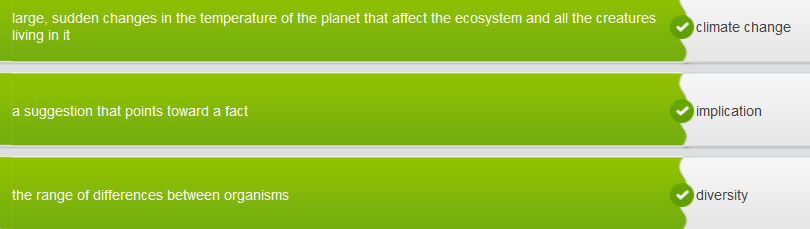
## Reading-Decline trend in bison population

Read the text describing the decline in bison populations. **bison /ˈbaɪsən/  A bison is a large hairy animal with a large head that is a member of the cattle family. Bison used to be very common in North America and Europe. 大野牛**



HOW THE BIG FREEZE KILLED THE BISON

**By William Underhill**   
  
Picture a bison. He's curly-headed, low-slung and huge. The male, the largest land animal in North America, may stand two meters high and tip the scales at one ton. Despite this formidable profile, the bison was no match for humans. In the 19th century, hunters brought ecological cataclysm to the Great Plains, slashing bison numbers from around 60 million to fewer than 1,000.   
  
Maybe nature should share the guilt. Scientists now say that the earliest bison population in North America fell victim to a more contemporary scourge: climate change. Alan Cooper, a molecular evolutionist at Oxford University, blames a big freeze, not man, for driving the species to near extinction in prehistory. And the same plunge in temperature may also have wiped out the mammoth, the lion and other species once common on the continent. Says Cooper: "Climate change may be much more destructive than we could have guessed."  
  
The findings, reported in the journal Science, contradict orthodox thinking. The first bison are thought to have migrated to North America up to 130,000 years ago, using the land bridge that connected Siberia with Alaska. Paleontologists have thought for years that they were nearly wiped out by humans, who arrived thousands of years later and hunted the beasts. That theory, though, is tough to square with the new research. Cooper and his colleagues carbon-dated bison fossils gathered in Canada, Russia and America. At the same time, they estimated bison populations by analyzing the positive correlation between bison numbers and the variance in their DNA.   
  
The data led to the conclusion that the bison had begun to decline in numbers 37,000 years ago, when there was less diversity in their DNA. This was thousands of years before humans arrived on the continent.   
  
So what happened? Researchers think that herds were weakened by the onset of a colder climate and resulting damage to their habitat. "The implication is that by the time that humans arrived 12,000 years ago, the population was already very low and it was relatively easy to deliver the coup de grace," says Cooper. Mankind and nature can make a mean partnership.



## “Write up” an experiment

|  |
| --- |
| write up sth: a [PHRASAL VERB](javascript:;)  1..If you **write up something** that has been done or said, you record it on paper in a neat and complete form, usually using notes that you have made. (根据笔记) 整理成文/写报告; 详细记叙写下来; 写(剧评、书评，报告等)  e.g.He **wrote up his visit** in a report of over 600 pages.  把他的访问整理成了六百多页的一份报告。  e.g. The editor asked him to **write up last night's concert**. 写关于昨晚音乐会的报道。  e.g. The reporter **wrote up his interview** with the president for the magazine.记者将其对总统的采访详细报道在杂志上。  2.用文字赞扬，写文章称颂 to **write someone up** for a decoration撰文赞扬某人使其获奖 |

You work at a scientific research institute and you are helping another scientist prepare his report on the effects the construction of a new dam will have on the local sloth population. Read the scientist’s experimental notes and give them appropriate headings.

Recommendation  -  Title  -  References  -  Methodology  -  Conclusion  -  Findings

Conclusion   
Two factors caused by dam construction (loss of habitat and reduction of food variety) will relate most to population decline.   
  
Title   
The Expected Effect of Sun Valley Dam on Local Sloth Species   
  
Findings   
A simulation run repeatedly to determine effect of each variable (e.g. area of habitat, food variety, etc.) found that loss of habitat and reduction of food variety will be the main factors caused by the construction of the dam.  
  
Recommendation   
Relocate local sloth species to neighbouring Corona Valley prior to dam construction to prevent ecological cataclysm and perhaps even extinction.   
  
References   
'West Indian Sloths and Two-Toed Tree Sloths: Megalonychidae', Grzimek's Student Animal Life Resource, January 1, 2005.  
  
Methodology   
Advanced PC simulations were used to test how dam construction and completion will relate to overall sloth livelihood.

## “Write up” a scientific report

//If you **write up something** that has been done or said, you record it on paper in a neat and complete form, usually using notes that you have made. (根据笔记) 整理成文/写报告; 详细记叙写下来; 写(剧评、书评，报告等)

Now help the scientist with his scientific report by writing the abstract, which should include all of the report's essential information. Use the notes to help you. Write 100-150 words.

Notes

|  |
| --- |
| **The Expected Effect of Sun Valley Dam on Local Sloth Species**  **Abstract** ?  **Methodology** Advanced PC simulation created to test how dam construction and completion will relate to overall sloth livelihood.  **Findings** Simulation run repeatedly to determine effect of each variable (e.g. area of habitat, food variety, etc.) found that loss of habitat and reduction of food variety will be the main factors caused by the construction of the dam.  **Conclusion** Two factors caused by dam construction (loss of habitat and reduction of food variety) will relate most to population decline.  **Recommendation** Relocate local sloth species to neighbouring Corona Valley prior to dam construction to prevent ecological cataclysm and perhaps even extinction.  **References** “West Indian Sloths and Two-Toed Tree Sloths: Megalonychidae”, Grzimek's Student Animal Life Resource, January 1, 2005. |

