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怎样让不说话 的人发声
经济学人

eg. I am trying to give voice to everyone.
我正在尝试让每个人都表达自己
的观点

the + adj. 表一类人

How to give voice to the speechless

give voice to sb. 让某人发声;
让某人表达意见或情感

amyo- 没有肌肉的
-trophic 有营养的

Of the many memorable things about Stephen Hawking, perhaps the

most memorable of all was his conversation. The amyotrophic lateral
肌肉萎缩的 侧面的
身体器官的硬化 /kon'fain/
sclerosis that confined him to a wheelchair also stopped him talking, so

肌萎缩性脊髓侧索硬化症

/leɪbər/ 新冻症
labor n. 劳动, 劳力 /læbərəriəs/ /'sɪnθəsəɪz/ v. 合成

instead a computer synthesised what became a world-famous voice. It was,
though, a laborious process. a laborious task
Labor Day 五一劳动节
synthesized (美式) synthetic a. 一项艰巨的任务

a. 费时费力的; 艰巨的, 艰难的

eg. Poverty confines my imagination.
贫穷限制了我的想象力。

eg. There are many vitamins that the body cannot synthesise.
人体中有很多的维生素是无法自己合成的。 itself.

更好的方式

A better way to communicate would be to read the brain of a paralysed

person directly and then translate those readings into synthetic speech. A
v. 读取 /sɪn'tetɪk/ a. 麻痹的, 瘫痪的; 不知所措的

study published in Nature this week, by Edward Chang, a neurosurgeon at
a. 合成的, 人造的 synthetic drugs
the University of California, San Francisco, describes just such a technique. 合成药物

By measuring the brain signals that control vocal-tract muscles, Dr Chang
ad. (强调加强语气) synthetic material
has been able to use a computer to synthesise speech accurately. 合成材料

张博士的研究

paralysed from the waist down
精确地 准确的
腰部以下全部瘫痪了

eg. She was paralysed with fear.
她被吓的不知所措

The volunteers for Dr Chang's study were five people with epilepsy
who had electrodes implanted into their brains as part of their treatment.
/ɪ'leptəsi/ n. 癫痫, 羊癫风, 癫痫病
/ɪ'lektroʊd/ /ɪm'plənt/ n. 电极 v. (手术) 植入, 移植

have sth done
表一种被动

He and his colleagues used these electrodes to record the volunteers' brain

electro-/electr- 跟电有关
electricity 电能 electrician 电工

implant a microchip in a human's body.
将芯片植入人的身体。

epi- (在...之上)
-lepsy (拿, 抓住)

speaking sth. out loud
大声说出 sth.

activity while those volunteers spoke several hundred sentences out loud.

实验步骤

eg. They converted the spare bedroom into a study.
他们将一间多余的卧室转变成了一间书房。

To convert those signals into speech they did two things. First, they
convert A into B 将A转换成B
trained a computer program to recognise what the signals meant. Then,

when the program had learned the relevant associations, they used it to

translate electrode signals into vocal-tract configurations, and thus into
sound.

eg. Scientists know little about the
configuration of the moon's surface.

eg. Smoking has a close association with lung cancer.
吸烟与肺癌有着强烈的关系

实验结果

After The principle proved, Dr Chang and his team went on to show that their
system could synthesise speech even when a volunteer mimed sentences,
rather than speaking them out loud.
而不是

(可理解为一个
时间状语)

/maɪm/
mimed
v. 摆口型; 假唱
n. 哑剧表演

eg. Some singers on television mime to pre-recorded
tapes.
一些歌手在电视上跟着已经录好的片段假唱。

目前的研究阶段 和以后的研究 方向

So far, Dr Chang has worked with people able to speak normally. The
next stage will be to ask whether his system can work for those who cannot
speak.