TEENS Senior

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Programming pain

Spencer Liu



hashtag 话题

#日本研发能感知疼痛的机器人#

阅读248.7万 讨论430

"Japanese Scientists Create A Robot That Can 'Feel' Pain"

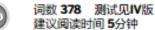






Researchers are teaching robots to feel pain to protect them and us. CFP

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Damasio is quick to point out that this communication is an interesting development, but "it's not the same thing" as a robot truly feeling and expressing emotions or pain. If one day, robots could actually feel as humans do, Damasio has a suggestion for the number one rule for robots: Feel good.

> BY MATT SADOWSKI, 21ST CENTURY TEENS STAFF

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Multiple choice questions

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Choose the best answer:

1. Why would a robot nervous system be beneficial, according to Kuehn?

- A. It could help robots treat humans' injuries gently.
- B. It could reduce accidents when robots work.
- C. It could teach robots how to find a source of danger.
- D. It could let robots respond more quickly to instructions.

2. What could the sensors developed by Asada and his colleagues be used for in the future?

- A. Collecting various types of touch signals.
- B. Turning human emotions into touch signals.
- C. Helping robots recognize the pain on human faces.
- D. Showing robots how to take care of the elderly.

3. What is Damasio's attitude toward this technology?

- A. It could promote interaction between humans and robots.
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Paragraph 1-2

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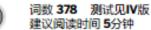
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Reading strategies

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Vocabulary

21st Century **Teens**

- artificial
- evade
- sensor

neuroscientist

• detect

Reading strategy 1:[X] guess the meaning based on the context / root & affix [O] look up in the English-English dictionary

Vocabulary

- artificial
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When we evade from the source of pain, it helps us not get hurt.

• sensor

- **neuroscientist** neuro+scientist
- detect

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Vocabulary

• artificial a.人工的

made or produced to copy sth natural; not real

• evade v.规避

to escape from sb/sth

• sensor n.传感器

a device that can react to light, heat, pressure, etc. in order to make a machine do sth or show sth

• neuroscientist n.神经学家

a person who studies the science that deals with the structure and function of the brain and the nervous system

- detect v.探测
- to discover or notice sth, especially sth that is not easy to see, hear, etc

Reading strategy 1:[X] guess the meaning based on the context / root & affix [O] look up in the English-English dictionary

Background information

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• Johannes Kuehn





• Minoru Asada

• Antonio Damasio



Reading strategy 2: [X] ignore

[O] search online for further information

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- Johannes Kuehn 约翰内斯·库恩
- Leibniz University of Hannover in Germany
- 德国汉诺威市的莱布尼茨大学
- Minoru Asada 浅田稔
- Osaka University in Japan 日本大阪大学
- Antonio Damasio 安东尼奥·达马西奥
- the University of Southern California 南加利福尼亚大学



 a magazine edited by the Institute of Electrical and Electronics Engineers

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Who? + What?

Johannes Kuehn and the other researchers are working to develop a nervous system to help robots feel pain and not get hurt.

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21st Century

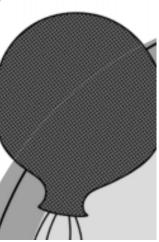
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Reading strategy 3: a. get rid of the unnecessary information b. find the key points and rearrange the word order

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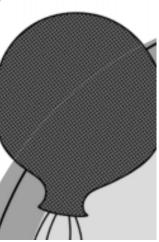
transitional sentence Who? + What?

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Paragraph 5-6

Antonio Damasio, a neuroscientist (神经学家) at the University of Southern California, argues that programming robots with a sense of pain (or something similar) may cause an artificial sense of feeling to develop. A robot with touch sensors that can *detect* (探测) pain is "along the lines of having a robot, for example, that smiles when you talk to it", Damasio said. "It's a device for communication of the machine to a human."



Damasio is quick to point out that this communication is an interesting development, but "it's not the same thing" as a robot truly feeling and expressing emotions or pain. If one day, robots could actually feel as humans do, Damasio has a suggestion for the number one rule for robots: Feel good.

3. What is **Damasio's attitude toward this technology**? A. It could promote interaction between humans and robots. B. It will eventually allow robots to feel as humans do. C. It will be hard to translate the artificial sense of feelings. D. It could lead to real human-robot emotional connections.

Reading strategy 1:[X] guess the meaning based on the context / root & affix [O] look up in the English-English dictionary

Reading strategy 2: [X] ignore [O] search online for further information

Reading strategy 3: a. get rid of the unnecessary information b. find the key points and rearrange the word order

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