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Ready-to-Use English Lessons by Sean Banville

Level 5 – 18th December 2023

Scientists make biocomputer with brain tissue

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https://breakingnewsenglish.com/2312/231218-brainoware-biocomputer-5.html

Contents

Please try Levels 4 and 6. They are (a little) harder.

THE READING

    Humans and machines are closer to merging after researchers in the USA built a "biocomputer". Bioengineers combined laboratory-grown human brain tissue with microelectrodes. They dubbed their creation Brainoware. It is in its embryonic stage, but it can already perform complex tasks like voice recognition. Dr Feng Guo hopes the software will help to advance AI technology. It could also mean AI hardware requires less energy than silicon chips. Dr Guo said: "This is just proof-of-concept to show that we can do the job. We still have a long way to go."

    The researchers said Brainoware utilizes "organoids". These are artificially grown bundles of tissue that resemble an organ. Dr Guo's organoids have developed neurons, akin to those found in the human brain. The researchers' next step is to look at how Brainoware can undertake higher-level tasks. The technology could be used to create improved models of the brain, and help neuroscience research. It could also lead to cures for neurological diseases. A major challenge is to find solutions to keep the living tissue alive for longer.

Sources: https://www.**nature.com**/articles/d41586-023-03975-7
               https://www.**newscientist.com**/article/2407768-ai-made-from-living-human-brain-cells-performs-speech-recognition/
               https://www.**sciencealert.com**/scientists-built-a-functional-computer-with-human-brain-tissue

PHRASE MATCHING

PARAGRAPH ONE:

1.	Humans and machines are closer	a.	energy
2.	laboratory-grown human	b.	recognition
3.	It is in its embryonic	c.	way to go
4.	perform complex tasks like voice	d.	brain tissue
5.	software will help to advance	e.	stage
6.	AI hardware requires less	f.	we can do the job
7.	proof-of-concept to show that	g.	to merging
8.	We still have a long	h.	AI technology

PARAGRAPH TWO:

1.	These are artificially	a.	neurons
2.	bundles of tissue that	b.	to find solutions
3.	organoids have developed	c.	higher-level tasks
4.	akin to those found	d.	grown
5.	Brainoware can undertake	e.	alive for longer
6.	lead to cures for neurological	f.	resemble an organ
7.	A major challenge is	g.	diseases
8.	keep the living tissue	h.	in the human brain

LISTEN AND FILL IN THE GAPS

Humans and machines are (1) _____ after researchers in the USA built a "biocomputer". Bioengineers combined laboratory-grown (2) _____ with microelectrodes. They dubbed their creation Brainoware. It is in its embryonic stage, but it can already (3) _____ like voice recognition. Dr Feng Guo hopes the software will help to advance AI technology. It (4) _____ AI hardware requires less energy than silicon chips. Dr Guo said: "This is (5) _____ concept to show that we can do the job. We (6) _____ long way to go."

The researchers said Brainoware utilizes "organoids". These are artificially grown (7) _____ that resemble an organ. Dr Guo's organoids have developed neurons, (8) _____ found in the human brain. The researchers' next step is to look at how Brainoware can undertake (9) _____. The technology could be used to create improved models of the brain, and help neuroscience research. It could also (10) _____ for neurological diseases. A major challenge is (11) _____ to keep the (12) _____ for longer.

PUT A SLASH (/) WHERE THE SPACES ARE

HumansandmachinesareclosertomergingafterresearchersintheUSA builta"biocomputer".Bioengineerscombinedlaboratory-grownhuma nbraintissuewithmicroelectrodes.TheydubbedtheircreationBrainow are.Itisinitsembryonicstage,butitcanalreadyperformcomplextasksli kevoicerecognition.DrFengGuohopesthesoftwarewillhelptoadvance AItechnology.ItcouldalsomeanAIhardwarerequireslessenergythans iliconchips.DrGuosaid:"Thisisjustproof-of-concepttoshowthatweca ndothejob.Westillhavealongwaytogo."TheresearcherssaidBrainowa reutilizes"organoids".Theseareartificiallygrownbundlesoftissuethat resembleanorgan.DrGuo'sorganoidshavedevelopedneurons,akinto thosefoundinthehumanbrain.Theresearchers'nextstepistolookatho wBrainowarecanundertakehigher-leveltasks.Thetechnologycould beusedtocreateimprovedmodelsofthebrain,andhelpneurosciencere search.Itcouldalsoleadtocuresforneurologicaldiseases.Amajorchall engeistofindsolutionstokeepthelivingtissuealiveforlonger.

BIOCOMPUTERS SURVEY

Write five GOOD questions about biocomputers in the table. Do this in pairs. Each student must write the questions on his / her own paper.
When you have finished, interview other students. Write down their answers.

	STUDENT 1 _____	STUDENT 2 _____	STUDENT 3 _____
Q.1.			
Q.2.			
Q.3.			
Q.4.			
Q.5.			

- Now return to your original partner and share and talk about what you found out. Change partners often.
- Make mini-presentations to other groups on your findings.

WRITE QUESTIONS & ASK YOUR PARTNER(S)

Student A: Do not show these to your speaking partner(s).

a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

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WRITE QUESTIONS & ASK YOUR PARTNER(S)

Student B: Do not show these to your speaking partner(s).

a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

WRITING

Write about **biocomputers** for 10 minutes. Read and talk about your partner's paper.