THE ARTICLE

From https://breakingnewsenglish.com/2004/200403-brainwaves.html

Scientists may soon be able to interpret what someone is saying simply by analysing their brainwaves as they speak. This revolutionary advance in neuroscience would help millions of people who suffer from communication problems and neurological disorders. The scientists developed a form of artificial intelligence that can decode brainwaves and translate them into text. Algorithms take the brain activity created as a person speaks and translates it in real time into sentences on a screen. The scientists are from the University of California, San Francisco. They say their algorithms have a 97 per cent translation accuracy rate but are working hard to improve on this.

The scientists say they are at the early stages of being able to machine-translate everything someone says. The software used in their experiments matched features of speech that were repeated frequently to parts and shapes of the mouth. These included elements of English speech such as vowels, consonants and commands. The experiments were limited to around 40 short and simply-constructed spoken sentences. The scientists said: "Although we should like the decoder to learn and exploit the regularities of the language, it remains to show how many data would be required to expand from our tiny languages to a more general form of English."

Sources: https://www.**bbc.com**/news/science-environment-52094111
https://www.**theguardian.com**/science/2020/mar/30/scientists-develop-ai-that-can-turn-brain-activity-into-text
https://www.**inverse.com**/innovation/brain-to-text

VOCABULARY MATCHING

Paragraph 1

1.	interpret	a.	A development or improvement.
2.	advance	b.	Convert a scrambled message into understandable language.
3.	neuroscience	c.	A disease or abnormal physical or mental condition.
4.	disorder	d.	The studies that deal with the structure or function of the nervous system and brain.
5.	decode	e.	Translate the words of a person speaking a different language.
6.	algorithms	f.	The quality or state of being correct or precise.
7.	accuracy	g.	A process or set of rules to be followed in calculations or other problem-solving operations.

Paragraph 2

8.	feature	h.	Make full use of and get benefit from.
9.	frequently	i.	A distinctive quality, characteristic or aspect of something.
10.	element	j.	A basic sound in speech made by the lips or tongue blocking the breath.
11.	vowel	k.	Things that are constant or the same.
12.	consonant	l.	A part (often essential) of something.
13.	exploit	m.	A letter representing a sound, such as a, e, i, o, u.
14.	regularities	n.	Regularly or habitually; often.

BEFORE READING / LISTENING

From https://breakingnewsenglish.com/2004/200403-brainwaves.html

1. TRUE / FALSE: Read the headline. Guess if a-h below are true (T) or false (F).

a. Scientists can translate what someone is saying in different languages. **T / F**
b. New technology would help people with neurological problems. **T / F**
c. Algorithms could translate brainwaves into written text. **T / F**
d. Scientists say the algorithms are 97% accurate. **T / F**
e. Scientists are nearing the end of their testing. **T / F**
f. Software matched features of speech to the shape of a mouth. **T / F**
g. Scientists analysed over 40 thousand short sentences. **T / F**
h. Scientists said they needed to reduce the data they have. **T / F**

2. SYNONYM MATCH:

Match the following synonyms. The words in **bold** are from the news article.

1. simply	a. components
2. revolutionary	b. precision
3. disorders	c. utilize
4. translates	d. illnesses
5. accuracy	e. cutting-edge
6. stages	f. corresponded
7. matched	g. phases
8. elements	h. just
9. exploit	i. broaden
10. expand	j. converts

3. PHRASE MATCH: (Sometimes more than one choice is possible.)

1. analysing their brainwaves	a. accuracy rate
2. communication problems and	b. frequently
3. translates it in real	c. spoken sentences
4. algorithms have a 97 per cent translation	d. neurological disorders
5. working hard to improve	e. the early stages
6. scientists say they are at	f. as they speak
7. features of speech that were repeated	g. form of English
8. elements of English speech such as	h. on this
9. 40 short and simply-constructed	i. vowels
10. a more general	j. time

MULTIPLE CHOICE - QUIZ

From https://breakingnewsenglish.com/2004/200403-brainwaves.html

1) Who may be able to interpret what someone is saying?
a) interpreters
b) scientists
c) translators
d) people with brainwaves

2) What kind of disorders might the software help?
a) software disorders
b) major disorders
c) software disorders
d) neurological disorders

3) What translates brain activity as a person speaks?
a) Google translate
b) a mobile phone
c) algorithms
d) a website

4) When does the software translate brainwaves?
a) in real time
b) 10 minutes after a person speaks
c) next year
d) in 2021

5) What is the accuracy rate of the scientists' algorithms?
a) 3%
b) 97%
c) 50%
d) 40%

6) What stage are the scientists at in the testing?
a) the early stages
b) stage two
c) the final stage
d) stage 17

7) What was matched to parts and shapes of the mouth?
a) a grammar book
b) identity software
c) features of speech
d) people

8) How many short sentences were used in the experiments?
a) 40
b) 36
c) 30
d) 24

9) What do scientists want to use to exploit regularities of language?
a) other languages
b) people's ability to learn
c) grammar books
d) their decoder

10) What must scientists expand to get to a more general from of English?
a) brain power
b) vocabularies
c) data
d) muscles

LANGUAGE - CLOZE

From https://breakingnewsenglish.com/2004/200403-brainwaves.html

Scientists may soon be able to interpret what someone is saying (1) _____ by analysing their brainwaves as they speak. This revolutionary advance (2) _____ neuroscience would help millions of people who suffer from communication problems and neurological disorders. The scientists developed a (3) _____ of artificial intelligence that can decode brainwaves and translate them (4) _____ text. Algorithms take the brain activity created as a person speaks and translates it in real (5) _____ into sentences on a screen. The scientists are from the University of California, San Francisco. They say their algorithms have a 97 per cent translation accuracy rate but are working hard to improve (6) _____ this.

The scientists say they are at the early stages of (7) _____ able to machine-translate everything someone says. The software used in their experiments matched features of speech that were repeated (8) _____ to parts and shapes of the mouth. These included elements of English speech such (9) _____ vowels, consonants and commands. The experiments were limited to around 40 short and simply-(10) _____ spoken sentences. The scientists said: "Although we should like the decoder to learn and exploit the regularities of the language, it (11) _____ to show how many data would be required to expand from our tiny languages to a (12) _____ general form of English."

Put the correct words from the table below in the above article.

1.	(a)	simple	(b)	sample	(c)	simply	(d)	samples
2.	(a)	in	(b)	at	(c)	by	(d)	as
3.	(a)	form	(b)	firm	(c)	frame	(d)	farm
4.	(a)	into	(b)	unto	(c)	onto	(d)	as to
5.	(a)	tome	(b)	time	(c)	tame	(d)	tum
6.	(a)	of	(b)	as	(c)	to	(d)	on
7.	(a)	been	(b)	be	(c)	being	(d)	begin
8.	(a)	frequented	(b)	frequency	(c)	frequent	(d)	frequently
9.	(a)	as	(b)	has	(c)	is	(d)	was
10.	(a)	restructured	(b)	constructed	(c)	constricted	(d)	contrasted
11.	(a)	stays	(b)	remains	(c)	waits	(d)	keeps
12.	(a)	many	(b)	much	(c)	more	(d)	mare

SPELLING

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Paragraph 1

1. tiprernet what someone is saying
2. revolutionary advance in unosiceercne
3. problems and neurological ioddrsers
4. loatirhgms take the brain activity
5. nsnetcees on a screen
6. translation ucarccay rate

Paragraph 2

7. matched etfruaes of speech
8. repeated rqfneutely
9. vowels, oscanonnts and commands
10. simply ontccurtsed
11. xlpeoit the regularities of the language
12. be qruireed to expand

PUT THE WORDS IN THE RIGHT ORDER

From https://breakingnewsenglish.com/2004/200403-brainwaves.html

1. interpret able someone is to Be what saying .

2. from Millions people communication who of suffer problems .

3. artificial form scientists a intelligence . developed The of

4. real Algorithms it translate time into sentences . in

5. 97% rate . algorithms translation Their have a accuracy

6. at Scientists say they are the stages . early

7. of were that frequently . Matched repeated speech features

8. English Elements speech of as vowels . such

9. short Around spoken 40 simply-constructed and sentences .

10. how many would Show be data required .