

INSTRUÇÃO: Leia o texto para responder às questões de números **31** a **39**.

Brazil: the natural knowledge economy

Kirsten Bound – THE ATLAS OF IDEAS

If you grew up in Europe or North America you will no doubt have been taught in school that the Wright Brothers from Ohio invented and flew the first aeroplane – the Kitty Hawk – in 1903. But if you grew up in Brazil you will have been taught that the real inventor was in fact a Brazilian from Minas Gerais called Alberto Santos Dumont, whose 14-bis aeroplane took to the skies in 1906. This fierce historical debate, which turns on definitions of ‘practical airplanes’, the ability to launch unaided, length of time spent in the air and the credibility of witnesses, will not be resolved here. Yet it is a striking example of the lack of global recognition for Brazil’s achievements in innovation.

Almost a century later, in 2005, Santos Dumont’s intellectual heirs, the company Empresa Brasileira de Aeronáutica (EMBRAER), made aviation history of a different kind when they unveiled the Ipanema, the world’s first commercially produced aircraft to run solely on biofuels. This time, the world was watching. Scientific American credited it as one of the most important inventions of the year. The attention paid to the Ipanema reflects the growing interest in biofuels as a potential solution to climate change and rising energy demand. To their advocates, biofuels – most commonly bioethanol or biodiesel – offer a more secure, sustainable energy supply that can reduce carbon emissions by 50–60 per cent compared to fossil fuels.

From learning to fly to learning to cope with the environmental costs of flight, biofuel innovations like the Ipanema reflect some of the tensions of modern science, in which expanding the frontiers of human ingenuity goes hand in hand with managing the consequences. The recent backlash against biofuels, which has seen them blamed for

global food shortages as land is reportedly diverted from food crops, points to a growing interdependence between the science and innovation systems of different countries, and between innovation, economics and environmental sustainability.

The debates now raging over biofuels reflect some of the wider dynamics in Brazil’s innovation system. They remind us that Brazil’s current strengths and achievements have deeper historical roots than is sometimes imagined. They reflect the fact that Brazil’s natural resources and assets are a key area of opportunity for science and innovation – a focus that leads us to characterise Brazil as a ‘natural knowledge economy’. Most importantly, they highlight the propitious timing of Brazil’s growing strength in these areas at a time when climate change, the environment, food scarcity and rising worldwide energy demand are at the forefront of global consciousness. What changed between the maiden flight of the 14-bis and the maiden flight of the Ipanema is not just Brazil’s capacity for technological and scientific innovation, but the rest of the world’s appreciation of the potential of that innovation to address some of the pressing challenges that confront us all.

(www.demos.co.uk. Adaptado.)

Questão 31

The dispute about the first plane to take off and fly

- a) can’t be solved due to a historical debate between Santos Dumont and the Wright Brothers.
- b) shows that the world does not truly accept Brazil’s innovation and invention.
- c) established a plausible definition of flying artifacts as well as biased witnesses from Ohio.
- d) has been solved since Santos Dumont flew his 14-bis plane in 1906.

e) has started in the USA, where children learn that the Kitty Hawk was the first plane to fly.

alternativa B

No texto:

"Yet it is a striking example of the lack of global recognition for Brazil's achievements in innovation."

Questão 32

According to the text, in Brazil people learn that

- a) the Kitty Hawk spent less time in the air than the 14-bis.
- b) both the Kitty Hawk and the 14-bis could not take off unaided.
- c) there were no pictures taken of the first 14-bis flight.
- d) Santos Dumont was born in Minas Gerais, where the 14-bis first flew.
- e) the 14-bis, created by Santos Dumont, had its maiden flight in 1906.

alternativa E

Tradução da alternativa:

"o 14-bis, criado por Santos Dumont, fez seu primeiro voo em 1906."

Questão 33

Segundo o texto, a aeronave Ipanema

- a) demonstrou que a pesquisa aeroespacial está progredindo por causa da disputa com os irmãos Wright.
- b) consolidou a EMBRAER, com mais de um século de inovação na aeronáutica, como a empresa do ano.
- c) chamou atenção por usar biocombustíveis e até foi considerada uma das invenções mais importantes de 2005.
- d) deu origem ao interesse do mundo por etanol e biodiesel como alternativos aos combustíveis fósseis.
- e) reduziu o consumo de combustível em cerca de 50 a 60%, tornando os voos mais econômicos.

alternativa C

No texto:

"Scientific American credited [Ipanema, the world's first commercially produced aircraft to run solely on biofuels] as one of the most important inventions of the year [2005]..."

Questão 34

According to the text, biofuels

- a) have caused a strong reaction against them because land formerly used for food crops is now used for biofuel production.
- b) provide sustainable energy that can be used to minimize global food shortages and climate change.
- c) have shown detrimental effects on economics and environment, although they come from renewable sources.
- d) are a temporary solution to supply the soaring energy demand until new fossil fuel sources come into operation.
- e) should be produced in different countries and from varied crops in order to become economically viable.

alternativa A

No 3º parágrafo:

"The recent backlash against biofuels, which has seen them blamed for global food shortages as land is reportedly diverted from food crops..."

Questão 35

Brazil is characterized as a 'natural knowledge economy' because

- a) environmental and climate changes should be globally addressed.
- b) issues such as food scarcity and energy demand have been duly solved.
- c) there was no significant impact of biofuel crops on other agricultural commodities.
- d) science and innovation opportunities have been created from its natural resources.
- e) it has always produced plenty of agricultural goods thanks to its favorable climate.

alternativa D

No texto:

"... Brazil's natural resources and assets are a key area of opportunity for science and innovation – a focus that leads us to characterise Brazil as a 'natural knowledge economy'."

Questão 36

O trecho do segundo parágrafo – *This time, the world was watching.* –

- a) refere-se à fundação da EMBRAER com o lançamento do Ipanema.
- b) faz contraste com o ano de 1906, em que o 14-bis fez seu voo.
- c) faz uma analogia entre o Kitty Hawk e o Ipanema.
- d) considera que o intervalo de um século entre os voos do 14-bis e do Ipanema foi demasiado.
- e) refere-se aos cientistas americanos que viajaram no voo inaugural do Ipanema.

alternativa B

Em 1906 o mundo não reconheceu o feito de Santos Dumont. Hoje, entretanto, o mundo está observando atentamente.

Questão 37

No trecho do segundo parágrafo – *To their advocates, biofuels ...* – a expressão *their advocates* refere-se

- a) aos defensores dos biocombustíveis.
- b) aos herdeiros intelectuais de Santos Dumont.
- c) à EMBRAER.
- d) aos cientistas que idealizaram o Ipanema.
- e) aos cientistas americanos.

alternativa A

advocate = supporter who speaks in favor of something.

Questão 38

No trecho do terceiro parágrafo – *which has seen them blamed for global food shortages as land is reportedly diverted from food crops* – a palavra *as* introduz

- a) um contraste.

- b) uma condição.
- c) uma comparação.
- d) uma consequência.
- e) uma causa.

alternativa E

Tradução do trecho:

"que os considerou culpados pela escassez global de alimentos já que o uso da terra, alega-se, foi desviado da produção de alimentos."

A palavra *as* ("já que") indica a razão pela qual os biocombustíveis foram considerados culpados pela escassez de alimentos.

Questão 39

An example of the pressing challenges mentioned in last lines of the text – *the pressing challenges that confront us all.* – is

- a) the 'natural knowledge economy'.
- b) technological and scientific innovation.
- c) climate change, the environment and food scarcity.
- d) Brazil's current strengths and achievements.
- e) biofuel.

alternativa C

No texto:

"Most importantly, they highlight the propitious timing of Brazil's growing strength in these areas at a time when climate change, the environment, food scarcity (...) are at the forefront of global consciousness."

INSTRUÇÃO: Leia o texto para responder às questões de números 40 a 45.

To Scientists, Laughter Is No Joke – It's Serious

March 31, 2010.

So a scientist walks into a shopping mall to watch people laugh. There's no punchline. Laughter is a serious scientific subject, one that researchers are still trying to figure out. Laughing is primal, our first way of communicating. Apes laugh. So do dogs and rats. Babies laugh long before they speak. No one teaches you how to laugh. You just do. And often you laugh involuntarily, in a

specific rhythm and in certain spots in conversation.

You may laugh at a prank on April Fools' Day. But surprisingly, only 10 to 15 percent of laughter is the result of someone making a joke, said Baltimore neuroscientist Robert Provine, who has studied laughter for decades. Laughter is mostly about social responses rather than reaction to a joke. "Laughter above all else is a social thing," Provine said. "The requirement for laughter is another person."

Over the years, Provine, a professor with the University of Maryland Baltimore County, has boiled laughter down to its basics. "All language groups laugh 'ha-ha-ha' basically the same way," he said. "Whether you speak Mandarin, French or English, everyone will understand laughter. ... There's a pattern generator in our brain that produces this sound."

Each "ha" is about one-15th of a second, repeated every fifth of a second, he said. Laugh faster or slower than that and it sounds more like panting or something else. Deaf people laugh without hearing, and people on cell phones laugh without seeing, illustrating that laughter isn't dependent on a single sense but on social interactions, said Provine, author of the book "Laughter: A Scientific Investigation."

"It's joy, it's positive engagement with life," said Jaak Panksepp, a Bowling Green University psychology professor. "It's deeply social." And it's not just a people thing either. Chimps tickle each other and even laugh when another chimp pretends to tickle them. By studying rats, Panksepp and other scientists can figure out what's going on in the brain during laughter. And it holds promise for human ills.

Northwestern biomedical engineering professor Jeffrey Burgdorf has found that laughter in rats produces an insulin-like growth factor chemical that acts as an antidepressant and anxiety-reducer. He thinks the same thing probably happens in humans, too. This would give doctors a new chemical target in the brain in their effort to develop drugs that fight depression and

anxiety in people. Even so, laughter itself hasn't been proven to be the best medicine, experts said.

(www.nytimes.com. Adaptado.)

Questão 40

Segundo o texto, a risada

- foi estudada pelos cientistas em locais com aglomeração de gente.
- só é prontamente entendida entre falantes do mesmo grupo linguístico.
- agrega diversos sentidos, como visão e audição, para ser comunicada.
- já foi estudada por cientistas das principais universidades do mundo.
- é uma resposta social, que pode ser observada em alguns animais.

alternativa E

No texto:

"... [Laughter] is deeply social [and] it's not just a people thing either. [It can be seen in] chimps [and] rats..."

Questão 41

According to the text,

- chimpanzees have the same laughing pattern as humans.
- one responds to laughing if people around are laughing too.
- laughter is prompted mostly by a joke or a trick.
- both Provine and Panksepp agree that laughter is a social response.
- children laugh as soon as they start learning a language.

alternativa D

No texto:

4º parágrafo: "illustrating that laughter isn't dependent on a single sense but on social interactions, said Provine"

5º parágrafo: " 'It's joy, it's positive engagement with life,' said Jaak Panksepp (...). 'It's deeply social.' "

Questão 42

Jeffrey Burgdorf discovered that

- a) rats that laugh grow bigger.
- b) there is a chemical produced in the body by laughter in rats.
- c) people who laugh a lot are less prone to anxiety and depression.
- d) benefits produced by laughter are better than many medicines.
- e) all animals that laugh feel better.

alternativa B

No texto:

"... Jeffrey Burgdorf has found that laughter in rats produces an insulin-like growth factor chemical..."

Questão 43

The excerpt of the first paragraph – *You just do.* – means that

- a) people simply laugh.
- b) you laugh because you learned it.
- c) people laugh involuntarily.
- d) you started laughing since you were a baby.
- e) people laugh the same way.

alternativa A

Trata-se do sentido implícito no contexto:

"You [and other people] just [= simply] do [laugh, though no one has taught you how to do it]."

Questão 44

No trecho do terceiro parágrafo – *Whether you speak Mandarin, French or English, everyone will understand laughter.* – a palavra *whether* pode ser substituída, sem alteração de sentido, por

- a) Whatsoever.
- b) In due time.
- c) Nevertheless.
- d) No matter if.
- e) Furthermore.

alternativa D

Whether = if.

Tradução do trecho:

"Se [whether] você fala mandarim..."

Com a alternativa correta:

"Não importa se [No matter if] você fala mandarim..."

Questão 45

No trecho do quarto parágrafo – *Laugh faster or slower than that and it sounds more like panting or something else.* – a palavra *like* indica

- a) preferência.
- b) probabilidade.
- c) semelhança.
- d) condição.
- e) ênfase.

alternativa C

It sounds more like = fica mais parecido a, soa como.