

MÓDULO 3 – Inglês – 3ª série do Ensino Médio

Text I

A REVOLUTION IN BRAIN EVOLUTION?

In a study that refutes a century of popular belief about the brain, scientists have found that humans are not necessarily stuck with the number of brain cells they were born with after all.

Researchers from Princeton University discovered that new neurons are continually added to the cerebral cortex of adult monkeys, which, if true for humans, could one day lead to new therapies for memory loss, brain damage, and diseases like Alzheimer's.

"The monkey is fundamentally like the human," said psychology professor Charles Gross, who conducted the study with associate psychology professor Elizabeth Gould. "There is no way that this can't go on in humans. It's inconceivable that it doesn't." Gould and Gross found that neurogenesis – the formation of new neurons or nerve cells – takes place in several regions of a monkey's cerebral cortex, the part of the brain that is believed crucial for thinking, decision-making, as well as understanding and learning about the world.

For the better part of the last century, neuroscientists have believed that the brain, unlike other organs, did not grow new cells or repair itself. "It's always been that you're born with all that you'll ever have," said William Greenough, director of the neuroscience program at the Beckman Institute at the University of Illinois. "We've always argued that the adult brain was not capable of normal cell proliferation." But prior studies proved that neurogenesis does in fact occur in the brains of monkeys, but only in the older, more primitive parts of the brain, like the olfactory system, or the hippocampus, which is thought to control aspects of memory formation. Despite that new evidence, however, many scientists believed that any formation of new neurons in the adult brain had to be an aberration and that the structure of the brain was stable and unchanging.

While the results of the study could lead to theoretical changes in neuroscience, scientists caution that the formation of new neurons has not been proven in humans yet, and future applications for cell replenishment and repair are still a long way off.

(<http://www.wired.com/news/technology/0,1282,31889,00.html>)

21 O texto trata de:

- (A) neurogênese cerebral.
- (B) danos cerebrais em macacos.
- (C) tratamento para doença de Alzheimer.
- (D) recuperação da memória.
- (E) capacidade de aprendizagem.

22 Charles Gross e Elizabeth Gould:

- (A) são médicos veterinários especializados em símios.
- (B) desenvolveram um programa de neurociência juntamente com William Greenough.
- (C) trabalham com recuperação de memória na área de psicologia.
- (D) são professores e pesquisadores na Universidade de Princeton.
- (E) atuam na área de psiquiatria ligada à veterinária.

23 O estudo de Gross e Gould contradiz a idéia de que:

- (A) o cérebro de macacos é semelhante ao de seres humanos.
- (B) a formação de novos neurônios ocorre no córtex cerebral.
- (C) a estrutura cerebral é estável e fixa.
- (D) as células de todos os órgãos são capazes de se renovarem.
- (E) o cérebro primitivo de macacos é mais maleável.

24 As descobertas do estudo de Gross e Gould:

- (A) aplicam-se somente a cérebros primitivos como os dos primatas.
- (B) propõem curas para pessoas que sofreram danos cerebrais.
- (C) Concentram-se no hipocampo de macacos adultos com problema de memória.
- (D) já resultaram em aplicações na recuperação de neurônios cerebrais humanos.
- (E) podem ser estendidas aos seres humanos, por suas semelhanças com os macacos.

25 Na frase do segundo parágrafo — *There is no way that this can't go on in humans* — a palavra *this* refere-se a:

- (A) therapies. (D) neurons.
- (B) neurogenesis. (E) cerebral cortex.
- (C) monkey.

26 No terceiro parágrafo, a frase — *Neuroscientists have believed that the brain, unlike other organs, did not...* — a palavra *unlike* indica:

- (A) preferência. (D) semelhança.
- (B) decorrência. (E) inclusão.
- (C) diferença.

27 A palavra “does” — sublinhada no 3º parágrafo — introduz:

- (A) interrogação indireta.
- (B) substituição verbal.
- (C) ênfase.
- (D) negação implícita.
- (E) contraste temporal.

28 Na frase do terceiro parágrafo — *... more primitive parts of the brain, like the olfactory system, or the hippocampus ...* — a palavra *like* indica:

- (A) exemplificação. (D) exclusão.
- (B) semelhança. (E) conclusão.
- (C) diferença.

29 No penúltimo parágrafo do texto, a palavra “despite” em — *Despite that new evidence, ...* — pode ser substituída, sem mudar o sentido, por:

- (A) because of. (D) in addition to.
- (B) nevertheless. (E) in spite of.
- (C) owing to.

30 Na frase do terceiro parágrafo do texto — *It's always been that you're born with all that you'll ever have,* — a forma 's em **It's** significa:

- (A) is. (D) this.
- (B) has. (E) have.

(C) was.

Text II

1,000 MIRA STARS

The first detailed study of variable stars in a galaxy outside our Local Group has turned up more than 1,000 luminous red variables in Centaurus A, a giant elliptical galaxy 13 million light-years away. The variable stars are mostly “Mira type”, which means they vary by more than 2.5 magnitudes over periods that range between 100 and 1,000 days.

Mira was the first long—period variable discovered and experiences a 1,500—fold change in brightness over a period of 11 months. Mira is a red giant; nearly all red giants are variable stars. The pulsations in a red giant’s luminosity are caused by dramatic fluctuations in the star’s temperature and size due to its end—of—life phase.

Detecting the variable stars confirms the existence of intermediate—age stars in the halo of Centaurus A. This provides a window on the stellar contents of giant elliptical galaxies and helps scientists understand how these galaxies form. The relationship between the luminosity and the period in the variable stars’ fluctuations also confirms previous distance estimates of Centaurus A.

(by Kelly K. Whitt, *Astronomy*, October, 2003. p.28)

E1 The expression *to turn up* as in “has turned up” (line 02) means the same as:

- (A) to create.
- (B) to arrive.
- (C) to increase.
- (D) to discover.
- (E) to appear.

E2 Centaurus A (lines 02—03) is defined according to:

- (A) size, shape and distance.
- (B) function, origin and distance.
- (C) color, shape and size.
- (D) shape, function and distance.
- (E) color, origin and size.

E3 A palavra “brightness” (linha 07) pode ser substituída, sem alteração de sentido contextual, por:

- (A) liveliness.
- (B) richness.
- (C) luminousness.
- (D) sharpness.
- (E) smartness.

E4 The term *fold*, as in “1,500-fold change” (line 07), indicates:

- (A) combination.
- (B) addition.
- (C) multiplication.
- (D) coordination.
- (E) subdivision.

E5 Em uma das alternativas a seguir, todas as palavras extraídas do texto têm forma e significado semelhantes em português. Assinale-a:

- (A) study — variable — galaxy — range;
- (B) pulsation — dramatic — periods — temperature;
- (C) pulsation — size — fluctuation — phase;
- (D) stellar — caused — confirms — distance;
- (E) existence — luminosity — means — vary.

E6 According to the text, the study of variable Mira-type stars opens a new window for understanding the _____ of giant elliptical galaxies.

- (A) observation
- (B) evolution
- (C) luminosity
- (D) fluctuation
- (E) magnitude

37 The question that CANNOT be answered with the information in the text is:

- (A) Who has led this research project?
- (B) What are the Mira—type stars?
- (C) How many red variable stars have been discovered in Centaurus A?
- (D) Where is the newly discovered galaxy located?
- (E) What causes the stellar pulsations?

Text III

DAME YANKEE — THE SCREEN LEGEND

Katharine Hepburn

Kate Remembered — appeared with suitable briskness, less than two weeks after the June 29 death of Katharine Hepburn at age 96. Her own departure was one stipulation Hepburn placed on A. Scott Berg before the esteemed biographer of Max Perkins, Samuel Goldwyn and Charles Lindbergh could tell her stories. And as it happened, that gave Berg twenty years of friendship with the great actress to prepare this unusual and unusually fitting “account”, as he describes it, of a life lived outside the usual in virtually all things.

Hepburn herself referred to Berg as her biographer, but *Kate Remembered* is a very unorthodox biography: “Remembered” is the key word, since his touching, encoded tribute is as much about what it meant to be a devoted friend as it is about the object of devotion. And, indeed, *Remembered* begins dubiously — and somewhat crustily — with a story about how Berg met Hepburn. Writing a magazine article about the star, the writer shows up at her Manhattan door and is immediately commanded to use the bathroom by the hostess, certain she knew a guest’s bladder better than the owner did.

An understanding of one another quickly follows. And so, gradually, does a sense not only of what Hepburn did, and with whom, but perhaps the closest we can come to feeling what it was like to live Hepburn’s life as she did in a pattern of attachments and detachments.

(by Lisa Schwarzbaum, Entertainment Weekly, July 25, 2003. p.74)

38 The statement which is TRUE according to the text is:

- (A) The writer of the 2003 article was a friend of Hepburn’s.
- (B) Berg is the biographer of both Hepburn’s and Schwartzbaum’s.
- (C) This magazine article was published shortly before the actress’s death.
- (D) The magazine this article was published in is probably about movies and plays too.
- (E) This article deals with relationships among people in the arts and literature.

39 Escolha a letra que mostra uma palavra que não significa parte do corpo humano:

- (A) Kidney.
- (B) Limb.
- (C) Liver.
- (D) Throat.
- (E) Touch.

40 A synonym for the word “departure”, as it is used in line 03, is:

- (A) take-off.
- (B) separation.
- (C) leavetaking.
- (D) death.
- (E) withdrawal.