

Question 1-11 are based on the following passage.

This passage is adapted from Madhuvanathi Kannan, "Overworking Your Brain Can Spark Ideas." ©2015 by Scientific American.

If you walk down to the office gallery at Pearlfisher Inc., a design agency, you are bound to hear the unmistakable cluck of plastic balls colliding. At first, you might dismiss it as the sound of employees chilling out on a ping pong game. What you see next might take your breath away—a huge ball pit filled with 81,000 white plastic balls. But frolicking in the pit are not preschoolers or kindergartners. They are in fact corporate managers, dressed in business suits, in an afternoon brainstorming session.

Companies relying on innovation go to astonishing lengths to imbue creativity in their staff. Jump In!, the wacky brainchild of Pearlfisher's creative strategist, is built on the premise that interleaving work and play can spark creativity in grown-ups, just like it did back in school days.

But it turns out that mental exhaustion from overwork can itself unleash creativity. When we are tired, our mind can be too weary to control our thoughts, and eccentric ideas that might normally be filtered out can bubble up, suggests a recent study by Rémi Radel at the University of Nice. This means that perhaps creative ideas can be hatched at the workplace, right when we feel drained from a mental overload.

In their study, Radel and colleagues overtaxed the minds of a group of undergrads by having them perform a computerized task that demanded attention: finding the direction of a center arrow by ignoring the directions of surrounding arrows. The task was iterated across 2000 trials. In conflict trials, the center and surrounding arrows pointed in opposite directions whereas in non-conflict trials, all arrows pointed in the same direction. The controls and test subjects faced conflict in 10% and 50% of the trials, respectively. After the students finished the task, the scientists measured their creativity in verbal tests. First, they asked the students to enlist multiple, innovative uses for common objects, such as paperclip, newspaper, shoe. Next, they tested the students' ability to connect unrelated words. They presented the students with a "priming word" followed by "target word"—for example, they flashed the word tiger followed by the word Ioni, jumbled from lion—and asked the students to vote whether the target word was a real or a non-existent word.

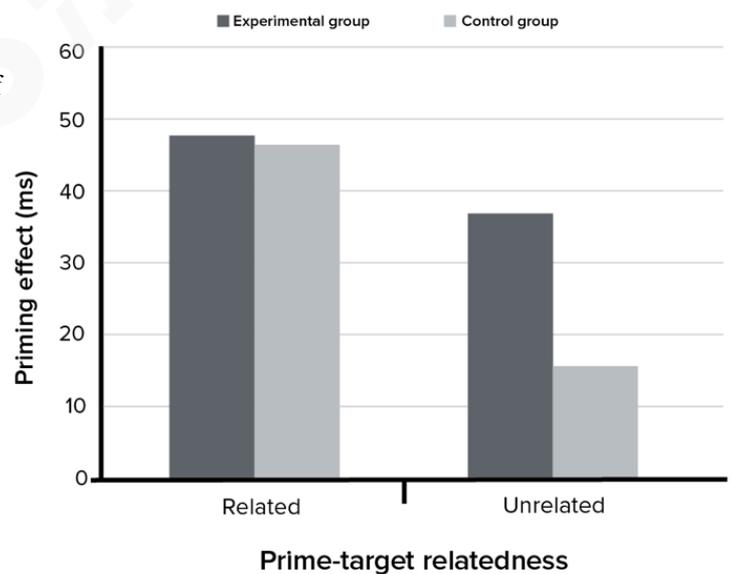
Radel found that students who took the rigorous attention task turned out to be more creative than others who had taken milder versions of the task. These students were also more likely to connect unrelated words in the word association test. They identified more non-existent words as real words especially when the prime-target pairs were seemingly related, such as tiger and Ioni. They perceived Ioni as lion when it appeared after tiger and hence, called it a real

word. Their ability to associate unrelated words came from a reduced filtering of irrelevant information—here, for instance, the priming word tiger—from the mind.

Radel's attention task induced creativity in the students by exhausting their inhibition, which is the brain's ability to sift out unwanted information from the conscious mind.

Although inhibition is essential for day-to-day activities such as problem-solving and focusing on tasks, it stifles creative thinking by gating out eccentric thoughts and ideas. Being creative is not just about achieving a state of low inhibition, but about tweaking inhibition for brief stints without losing control. Harvard psychologist Shelly Carson calls this process "flexing the brain." She says that creative people can turn down the volume of inhibition to let novel ideas inspire them, and then, turn the volume back up to put their ideas to meaningful use.

For beginners, Radel's technique of overtaxing the brain, to find a sweet window for a creative spell, may be a good place to start. As we go through our day, juggling multiple tasks, our mind works hard to stay focused on a single task. There is the added pressure to keep distractions at bay—meetings, e-mails, news updates. At the end of it all, we are left feeling exhausted. At such times, instead of shutting down and relaxing, we should perhaps learn to capitalize on the mental fatigue and try to kindle our creative genius.



1

The primary purpose of the passage is to

- A) discuss findings that support a particular conclusion about creativity.
- B) illuminate certain methods used to enhance creativity in the workplace.
- C) resolve a debate about how fatigue affects a brain's ability to function.
- D) illustrate how a positive outlook boosts a person's creativity.

2

In the first paragraph of the passage, the main effect of the phrases “preschoolers or kindergartners” and “corporate managers” is to

- A) critique an unusual business practice.
- B) present a recommendation on appropriate managerial conduct.
- C) emphasize a contrast between an activity and its participants.
- D) highlight an observation on the prevalence of childish behavior in many adults.

3

As used in line 44, “milder” most nearly means

- A) more sensitive.
- B) easier.
- C) blander.
- D) weaker.

4

The passage suggests that one reason subjects in the control group connected fewer unrelated words on average than did subjects in the experimental group is that the subjects in the control group were more likely to

- A) become distracted due to mental exhaustion.
- B) demonstrate their creativity in unexpected ways.
- C) exclude the priming words from conscious thought.
- D) mistake the jumbled words for real words.

5

Which choice provides the best evidence for the answer to the previous question?

- A) lines 37–41 (“They presented . . . word”)
- B) lines 44–46 (“These . . . test”)
- C) lines 48–50 (“They perceived . . . word”)
- D) lines 50–52 (“Their . . . mind”)

6

In the context of the passage as a whole, the sixth paragraph lines 53–65 primarily serves to

- A) clarify the meaning of the term “inhibition.”
- B) reflect on the results of Radel's study.
- C) explain Shelly Carson's notion of “flexing the brain.”
- D) provide guidance on how a person can employ creative strategies.

7

It can most reasonably be inferred that the author regards mental exhaustion as

- A) a potential opportunity for creative inspiration that should be pursued.
- B) an unpleasant consequence that results from performing mundane activities.
- C) a state that is less inclined to artistic invention than a state of mental alertness.
- D) the ideal condition in which to focus on multiple tasks.

8

Which choice provides the best evidence for the answer to the previous question?

- A) lines 11–14 (“Jump . . . days”)
- B) lines 16–19 (“When . . . Nice”)
- C) lines 68–71 (“As . . . updates”)
- D) lines 72–74 (“At such . . . genius”)

9

The graph indicates that the average priming effect of unrelated words for subjects in the experimental group was nearest in milliseconds (ms) to

- A) 10.
- B) 20.
- C) 30.
- D) 40.

10

The graph shows that on average, the priming effects of related words for subjects in the experimental group and the control group were

- A) similar.
- B) equivalent.
- C) variable.
- D) unpredictable.

11

The graph most directly refers to the component of the study summarized in which lines of the passage?

- A) lines 23–27 (“In their . . . arrows”)
- B) lines 30–32 (“The controls . . . respectively”)
- C) lines 33–35 (“First . . . shoe”)
- D) lines 35–37 (“Next . . . words”)

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