

This passage is from a recently published book about the science of learning new talents and skills.

1 As an example of how the adult brain can find a way, consider perfect pitch - the example of brain adaptability that we began this book with. As I discussed, it seems that there is an age past which is
5 very difficult, if not impossible, to develop perfect pitch. If you do proper training before you turn six, you are more likely to develop practice pitch. If you wait until you're twelve, you'll be out of luck. At least that is the standard telling of the tale. It turns out
10 that there is one more twist, and it is a very instructive one.

In 1969 Paul Brady, a researcher at the old Bell Telephone Laboratories, set out on what must have
15 appeared to most to be a quixotic undertaking. At the time he was thirty-two years old, and he had been involved in music all his life. He'd played the piano since he was seven, he had sung in choruses since he was twelve, and he even turned his own harpsichord.
20 But he had never had perfect pitch or anything close. He had never been able to tell which note on the piano or harpsichord was being played. And because he was an adult, everything that was known about perfect
25 pitch at the time indicated that he had lost his chance- he would never develop perfect pitch, no matter how hard he tried.

But Brady was not the sort to believe something was true just because everyone said it was. When he was
30 twenty one he decided he would try to reach himself to recognize notes. For two weeks he would play an A on his piano and try to remember what it sounded like. No luck. When he would come back a while later; he
35 couldn't tell an A from a B or a C or a G-sharp. A few years later he tried again with similar technique and similar results.

When he was thirty-two he decided to try again, this time vowing that he would keep working at it
40 until he succeeded. He tried everything he could think of. He spent hours thinking about notes and playing pieces in his head, trying to hear what distinguished one note from another. Nothing. He tried playing
45 piano pieces in different key with the hope that he could learn to tell the difference between the different keys. Still nothing. After three months he was no closer to perfect pitch than when he had started.

50 Then he was inspired by a paper that described a

55 training technique that had helped musicians without perfect pitch learn to recognize a single note. Brady set up a computer to produce random pure tones - these are tones that consist of a single
60 frequency, unlike a note from a piano, which has a dominant frequency but also a number of other frequencies as well and he used those pure tones to practice. At first, he had a large percentage of the randomly generated tones at the frequency of
65 a C note, theorizing that if he could learn to recognize the C, he could use it as a base from which to recognize the other tones by their relationship to the C. Over time, as he got better and better at recognizing the C, the computer was
70 set up to generate fewer and fewer of the Cs until all twelve notes were being generated with equal frequency.

Brady spent a half hour each day training with the tone generator, and at the end of two months he could identify every one of the twelve
75 notes being played without error. Then, to test whether he had actually trained himself to have perfect pitch, he devised a test with a piano. Each day his wife would play one random note on the piano, and he would try to identify it. She did this
80 for almost two months --fifty-seven days, to be exact - and at the end Brady looked to see how he had done. He had gotten thirty-seven exactly right; he'd missed eighteen by just half a tone - a B-flat instead of a B, for instance - and two by a full tone. Not perfect, but pretty close.
85 Furthermore, the technical definition of perfect pitch actually allows a certain percentage of answers that are off by half a tone, and many people who are accepted by researchers as having
90 perfect pitch actually make such errors themselves. So, by definition as well - Brady had taught himself, with two months of the right sort of practice, to have perfect pitch.

1. The passage is best described as a
 - (A) An appeal to try to learn perfect pitch
 - (B) A description of a study for learning perfect pitch
 - (C) An argument for the best method of perfect pitch
 - (D) A comparison of researchers' work regarding perfect pitch
 - (E) A summary of the history of research in teaching perfect pitch
2. The purpose of paragraph two is primarily to
 - (A) Develop an idea discussed in the first paragraph
 - (B) Contextualize the history of the subject
 - (C) Commentate on evidence presented in the first paragraph
 - (D) Present information important to the rest of the passage
 - (E) Introduce an important figure to the history of the subject
3. The author's tone in the third paragraph is best described as
 - (A) Tolerant and candid
 - (B) Empathetic and uplifting
 - (C) Solemn and regretful
 - (D) Pragmatic and laudatory
 - (E) Buoyant and informative
4. According to the author, Brady was unable to see a development in his perfect pitch until
 - (A) He tried a scientifically researched training technique
 - (B) He had practiced consistently for longer than three months
 - (C) He had broadened his musical background sufficiently
 - (D) He began training with pure notes devoid of additional frequencies
 - (E) He employed his wife's assistance to increase the randomness of the tests
5. In the context of the passage, the author most likely includes paragraph four in order to
 - (A) describe Brady's experimental design
 - (B) describe the spontaneous nature of Brady's research
 - (C) emphasize the importance of the piano in Brady's research
 - (D) portray the longitudinality of Brady's research
 - (E) convey the ineffectiveness of unpurposeful practice
6. The author most likely included lines 64-73 in order to
 - (A) portray the importance of the note C in his research
 - (B) detail the data collection method
 - (C) emphasize the use of repetition in Brady's research
 - (D) describing the use of technology in his research
 - (E) analyze the results of Brady's research
7. Paragraph five serves primarily to
 - (A) Discuss the nature of Brady's experiment
 - (B) Give an example of purposeful practice
 - (C) Relate Brady's work to other scientific research
 - (D) Evaluate a solution to the problem discussed in the previous paragraph
 - (E) Describe the dedication required in purposeful practice
8. The change in the author's tone from the fifth to sixth paragraph is
 - (A) Vindictive to objective
 - (B) Informative to corroborative
 - (C) Reflective to neutral
 - (D) Prejudiced to endorseful
 - (E) Instructive to despicable
9. What underlying purpose do lines 69-74 convey
 - (A) The need for a computer to do this form of research
 - (B) The success Brady's methods had allowed for
 - (C) The purposeful nature of Brady's methods
 - (D) The independent variable of Brady's research
 - (E) The use of different frequencies of sound in Brady's research
10. What is best described as the author's purpose in including lines 89-98 in the passage?
 - (A) To suggest future research should take Brady's errors into consideration
 - (B) To discuss and qualify a conclusion drawn from the data
 - (C) To identify Brady's research as the best technique to achieve perfect pitch
 - (D) To conclude the passage with a summary of its contents
 - (E) To propose a future study that could be done on perfect pitch

Answers are provided on the next page.

- 1) B
- 2) D
- 3) E
- 4) A
- 5) E
- 6) B
- 7) A
- 8) B
- 9) C
- 10) B

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