The Scent of Attraction: What Science Says About Smell

Name Date Class

Reading

1 Ask people what first attracted them to a partner and most will mention a smile, a voice, or the sound of a laugh. Almost nobody mentions smell. Yet a growing body of research suggests that **olfactory** cues may influence attraction more than we realize, mostly below the level of conscious thought. Scent is **intertwined** with biology, memory, and emotion in ways that are hard to separate, which is one reason it is so difficult to study and so easy to overstate.

2 The explanation may begin with the brain's wiring. Most sensory signals pass through a relay station called the thalamus on their way to the cortex. Smell takes a more direct route, and its signals reach the **limbic system**, a network of structures linked to emotion and memory, without that detour. This may help explain why a familiar scent can bring back a memory or a mood before you have had time to think. It also gives smell a strong emotional **resonance** in close relationships. You do not decide that someone smells good. You simply react.

3 One of the most **cited** studies in this field is the “sweaty T-shirt” experiment, published in 1995 by the Swiss biologist Claus Wedekind. Forty-four men each wore a cotton T-shirt for two nights and avoided scented products. Then 49 women rated how pleasant and sexy each shirt smelled. On average, the women preferred the shirts of men whose **major histocompatibility complex** (MHC), a group of genes involved in immune defense, was different from their own. The proposed **evolutionary** explanation is that children of parents with different MHC genes would inherit a wider range of immune defenses. On this view, the nose works as a genetic **compatibility** test. The preference reversed in women who were taking the contraceptive pill, which is one reason researchers still argue about what the result means.

4 The finding is less secure than it sounds. Some later studies **replicated** the pattern, but others did not, and two meta-analyses that combined many studies found no reliable overall preference for MHC-dissimilar partners in humans. Diet, perfume, and other lifestyle differences can **confound** the results, and the early participants were mostly university students. Popular accounts often go further and credit **pheromones**, chemical signals that trigger set responses in members of the same species. In many animals they are well documented. In humans, no compound has been rigorously shown to work as one, and the vomeronasal organ that detects pheromones in other mammals appears to be **vestigial** in adults, meaning it survives only as a remnant. The question is not closed, but the evidence is weaker than the popular version suggests.

5 The psychological evidence is stronger. Smell is often described as the most **evocative** of the senses, and experiments by Rachel Herz and colleagues support part of that claim: memories triggered by an odor were rated as more emotional than memories triggered by a picture or a word, although results on how vivid they are have been mixed. In relationships, a partner's scent may become **encoded** as a signal of safety. In a 2020 experiment at the University of British Columbia, 155 people slept with a T-shirt over their pillow. On average, their sleep was about two percent more efficient on nights with their partner's shirt than with a stranger's or a clean one, and this appeared whether or not they believed they were smelling their partner. The effect is small, and the study cannot show why it happens. It does fit the idea that a familiar scent works as a cue of attachment.

6 Then there is the money. Estimates of the global fragrance market in 2025 range from about 58 to 73 billion US dollars, depending on the source and on what is counted. The advertising suggests that a bottle can manufacture attraction. The evidence for that is limited. In a small 2009 experiment, women judged men who had worn a scented deodorant as more attractive after watching short silent videos of them, and the researchers linked this to the men feeling more confident rather than to any effect of the scent itself. If that interpretation is right, perfume works less like chemistry and more like **self-efficacy**, a person's belief that they can succeed in a particular situation. One experiment is not enough to settle the matter.

Vocabulary Matching

Match each word from the reading with its meaning. Write the letter on the line.

1	**olfactory**	_____	**A**	closely connected and hard to separate
2	**intertwined**	_____	**B**	bringing strong memories or feelings to mind
3	**limbic system**	_____	**C**	stored in memory in a particular form
4	**resonance**	_____	**D**	repeated by others to check the result
5	**cited**	_____	**E**	ability to fit or work well together
6	**major histocompatibility complex**	_____	**F**	belief that you can succeed at a task
7	**evolutionary**	_____	**G**	often named as a source or example
8	**compatibility**	_____	**H**	brain structures linked to emotion and memory
9	**replicated**	_____	**I**	relating to gradual change over many generations
10	**confound**	_____	**J**	chemical signals between members of a species
11	**pheromones**	_____	**K**	left over as a small, useless remnant
12	**vestigial**	_____	**L**	power to evoke a strong emotional response
13	**evocative**	_____	**M**	a group of genes involved in immune defense
14	**encoded**	_____	**N**	relating to the sense of smell
15	**self-efficacy**	_____	**O**	make results harder to interpret

Fill in the Blank

Choose a word from the box to complete each sentence. Use each word once. The words are already in the correct form.

cited	**compatibility**	**confound**	**encoded**	**evocative**	**evolutionary**	**intertwined**	**limbic system**
olfactory	**pheromones**	**replicated**	**resonance**	**self-efficacy**	**vestigial**		

1 Dogs have a much stronger _____ sense than humans.

2 In small towns, family life and business life are often _____ .

3 Fear and pleasure both involve the _____ .

4 The film's message had a deep emotional _____ for many viewers.

5 Her paper is one of the most _____ studies in the field.

6 There may be an _____ reason why humans enjoy sweet food.

7 Before moving in together, they talked about their _____ .

8 The result was later _____ by three independent teams.

9 Poor sleep could _____ any study of exam results and diet.

10 Ants use _____ to leave a trail for other ants.

11 Pythons have _____ hind legs that do not help them move.

12 The smell of fresh bread is _____ of my grandmother's kitchen.

13 New words are _____ more strongly in memory when linked to a story.

14 Small successes can build a student's _____ and motivation.

Comprehension Questions

Answer in your notebook or discuss with a partner. Questions 10 to 12 are IELTS-style.

1 According to the reading, how does the route that smell signals take through the brain differ from the route of most other senses?

2 What did the participants do in Wedekind's experiment, and what did the women's ratings suggest?

3 What happened to the women's preferences when they were taking the contraceptive pill?

4 Why does the writer say the MHC finding is "less secure than it sounds"?

5 What does the writer mean by calling the vomeronasal organ "vestigial" in adults?

6 How do the experiments by Herz and colleagues support the claim that smell is the most evocative sense, and where does the writer say the support is incomplete?

7 What did the University of British Columbia study find about sleep, and why does the writer say it cannot show why the effect happens?

8 Explain in your own words why the writer says perfume may work "less like chemistry and more like self-efficacy."

9 The reading moves from brain physiology to genetics, then to psychology, then to money. Why might the writer have chosen this order, and does it strengthen or weaken the final argument?

IELTS-Style Questions

10 **True, False, or Not Given:** *"Wedekind's 1995 findings have been confirmed by every later study."* Explain your answer using evidence from the reading.

11 **Yes, No, or Not Given:** *"The writer believes that human pheromones do not exist."* Explain your answer using evidence from the reading.

12 **Author's purpose:** Why does the writer end with the sentence "One experiment is not enough to settle the matter"? Is its purpose to criticize the fragrance industry, to protect the writer from overclaiming, or something else?

True or False

Circle T (true) or F (false) according to the reading. Write a correction for each false statement on the dotted line.

1 **T / F** The writer says most people do not mention smell when they describe what first attracted them to a partner.

2 **T / F** According to the reading, smell signals reach the limbic system without a stop in the thalamus.

3 **T / F** Wedekind's experiment was published in the 1990s.

4 **T / F** In Wedekind's experiment, the men wore their T-shirts for a single night.

5 **T / F** The contraceptive pill made no difference to the women's preferences.

6 **T / F** Some later studies replicated Wedekind's pattern, but others did not.

7 **T / F** The writer claims that pheromones have been proven to work in humans.

8 **T / F** The sleep improvement appeared only when participants believed they were smelling their partner.

9 **T / F** Estimates of the size of the fragrance market differ depending on the source.

10 **T / F** The 2009 experiment proved that perfume makes people more attractive.

Discussion Questions

Talk with a partner or in a small group. The questions move from personal to more abstract.

1 Have you ever been strongly attracted to, or put off by, someone's natural scent? How did it affect your feelings toward them?

2 Is there a smell that instantly takes you back to a specific memory or period of your life? What is it, and what does it bring back?

3 Do you wear perfume or cologne? What does it do for you? Is it more about how others see you, or how you feel about yourself?

4 Have you ever noticed that a place, a person, or an object smells comforting or safe? What created that association?

5 If you were far from a partner or a family member, would you keep something that smells like them? Does the idea feel comforting or strange?

6 Some people say they can tell a lot about a home or a person from the smell alone. Do you agree, or is this mostly imagination?

7 In your country, are there social norms about body odor, perfume, or cleanliness? How do they shape first impressions?

8 The reading says the sweaty T-shirt result has not been reliably replicated. When you hear about a surprising study in the news, how do you decide whether to believe it?

9 The reading says the evidence for human pheromones is weak, yet products that claim to contain them are sold. Should there be stricter rules about what such products may claim?

10 The reading suggests perfume may work mainly by changing how the wearer feels. Does this change your view of the fragrance industry, or of confidence itself?

11 If smell influences attraction below the level of conscious thought, how much freedom do we really have when we choose a partner?

12 Some scientists explain attraction through genes and evolution, while others emphasize culture and personal history. Which kind of explanation do you find more convincing, and why?

13 Why might modern life, with its screens and constant sound, have made us pay less attention to smell than to sight or hearing?

14 The reading describes smell as "the most evocative of the senses." Do you agree, or is a different sense more powerfully linked to memory and emotion for you personally?

Language Focus: Hedging Language

Hedging uses qualified language to show that a claim is possible, uncertain, or limited, instead of stating it as absolute fact.

In the reading:

- "A growing body of research suggests that olfactory cues **may influence** attraction more than we realize."
- "…the vomeronasal organ that detects pheromones in other mammals **appears to be** vestigial in adults…"
- "The evidence for that **is limited**."

Practice: Rewrite this sentence with appropriate hedging: *"Smell determines who we are attracted to."*

Activities and speed challenge
englishbridges.com/lessons/scent-attraction

Notes