

Answer key Exercise 9: Find the four tools of cohesion

1 Our analysis of scientific abstracts demonstrates that **positive** and—to a lesser
2 extent—**negative** words are increasingly used over the past four decades. **By contrast**,
3 **this increase** was absent for neutral and random words. **The increase** in **positive** words
4 could not be attributed to general language tendencies as represented by the millions
5 of printed books searched through in this study. **Neither** is **the increase** driven by one
6 or two words, **because** all words showed **increased** frequency patterns. **Even though**
7 **the upward trend** in positive word use was conserved in high impact journals, **this**
8 **trend** was significantly less pronounced (fig 1↓). **This difference** could be the result of a
9 more thorough and critical editorial and peer review process in high impact journals.

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11 *Implications of findings*

12 **Although** it is possible that researchers have adopted an increasingly **optimistic** writing
13 approach and are ever more enthusiastic about their results, **another explanation** is
14 more likely: scientists may assume that results and their implications have to be
15 **exaggerated and overstated** in order to get published. **Our finding that scientific**
16 **abstracts use more overt positive language** is **also** probably related to the emergence
17 of a **positive outcome bias** that currently dominates scientific literature. There is much
18 pressure on scientists in academia to publish as many papers as possible to further
19 their careers. **As a result**, we may be afraid to break the bad news that many studies do
20 not result in statistically significant or clinically meaningful effects.

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22 Currently, most research findings could be false or **exaggerated**, and research
23 resources are often wasted. **Overestimation** of research findings directly impairs the
24 ability of science to find true effects and leads to an unnecessary focus on research
25 marketability. **This** is supported by a recent finding that **superlatives** are commonly
26 used in news coverage of both approved and non-approved cancer drugs. The
27 consequences of **this exaggeration** are worrisome **since it** makes research a survival of
28 the fittest: the person who is best able to sell their results might be the most
29 successful. It is time for a new academic culture that rewards quality over quantity and
30 stimulates researchers to revere nuance and objectivity. **Despite** the steady increase of
31 superlatives in science, **this finding** should not detract us from the fact we need bright,
32 unique, innovative, creative, and excellent scientists.

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