PART 3

Read the text below and answer questions 27–40.

THE BILINGUAL ADVANTAGE DEBATE: COGNITIVE GAINS OR STATISTICAL MIRAGE?

A

For much of the twentieth century, bilingualism was treated as an educational circumstance—sometimes even as an obstacle—rather than as a variable of theoretical interest to cognitive science. This changed when researchers began to ask whether the continual management of two linguistic systems could recalibrate domain-general control mechanisms. The "bilingual advantage" hypothesis, in its careful form, does not claim a global increase in intelligence; rather, it proposes that the co-activation of competing lexical and phonological representations may impose persistent demands on selection, inhibition, and monitoring, thereby strengthening *executive control*. Yet the very formulation of the hypothesis embeds an epistemological challenge: if the proposed benefit is selective, context-sensitive, and potentially small, then it will be difficult to detect reliably, easy to overinterpret, and vulnerable to being reified into a simplistic slogan.

B

The experimental literature has therefore relied heavily on laboratory paradigms intended to operationalise executive function as measurable performance. In tasks such as Stroop, Simon, and Flanker, participants must respond to a target while resisting interference from an irrelevant dimension—colour words, spatial location, or incongruent distractor arrows. These paradigms are often interpreted through "conflict monitoring" models, in which control is upregulated when interference is detected. The bilingual claim is that routine language selection resembles a chronic, naturalistic version of conflict: both languages remain partially available, so the relevant code must be chosen while alternatives are suppressed. However, the mapping between bilingual language use and brief reaction-time tasks is indirect. The tasks may capture transient inhibitory control or attentional shifting, but whether they approximate the cognitive ecology of everyday bilingual communication remains contested.

C

A further complication is that reported effects have been heterogeneous. Some studies find modest advantages under high-conflict conditions—slightly faster reaction times, smaller interference costs, or fewer errors—while other studies produce null or even reversed patterns. Over time, this inconsistency has become entangled with a broader "replication crisis" in psychology. If effects are small, then underpowered designs will yield

unstable estimates, and idiosyncratic analytic decisions can determine whether a result reaches significance. In this context, the size and composition of *samples* becomes decisive: small groups amplify noise, increase the probability of false positives, and invite overfitting to peculiarities of a particular cohort. Publication bias compounds the problem by preferentially rewarding positive findings, which can create an inflated impression of coherence in the published record while null results remain comparatively invisible.

D

Methodological reforms have been adopted in response. Preregistration is intended to constrain researcher degrees of freedom by specifying hypotheses and analyses in advance; open data and open materials allow reanalysis and facilitate cumulative scrutiny; multi-lab collaborations increase power and diversify recruitment, thereby testing whether an effect survives beyond a single research context. Yet improved transparency does not, by itself, eliminate conceptual ambiguity. When bilingualism is treated as a binary category, what exactly is being compared? A bilingual who switches languages across domains daily is not equivalent to a bilingual who rarely switches, nor is early balanced bilingualism equivalent to late second-language acquisition with strong dominance. Thus, even impeccably conducted studies may still compare incommensurable populations, producing “clean” null results that reflect definitional imprecision rather than the absence of any cognitive adaptation.

E

The definitional problem intersects with an even older threat to inference: confounding variables. Bilingual and monolingual groups often differ systematically in socioeconomic status, education, immigration background, literacy practices, and cultural norms around test-taking. Even subtle differences—such as familiarity with computerized tasks, comfort responding under speed pressure, or attitudes toward error-making—can influence reaction-time performance independently of language experience. While matching procedures and statistical controls can reduce some bias, perfect matching is rarely feasible, especially when bilingualism is socially patterned. Consequently, an observed “advantage” could reflect enrichment opportunities correlated with bilingualism in some settings, whereas a null or “disadvantage” could reflect stressors correlated with minority language status in others. The core difficulty is that bilingualism is not randomly assigned; it is embedded in social history.

F

A distinct strand of argument shifts attention from young adult reaction-time tasks to ageing trajectories. Several observational studies have reported that bilinguals show later onset of dementia symptoms than comparable monolinguals, an effect frequently

interpreted through the framework of *cognitive reserve*. The reserve account suggests that sustained mental engagement across the lifespan may enable individuals to maintain functional performance longer despite accumulating neuropathology. However, causality is particularly elusive here. It is plausible that bilingualism contributes to reserve, yet it is also plausible that individuals with stronger baseline cognitive resources are more likely to maintain active bilingual practices, or that delayed diagnosis reflects differences in healthcare access, family advocacy, or culturally patterned help-seeking. Thus, while the dementia literature is often cited as the most socially consequential evidence in favour of bilingual benefits, it also exemplifies how easily correlation can be mistaken for mechanism.

G

Neuroscientific findings add an additional layer without closing the argument. Structural and functional imaging studies sometimes report differences in connectivity or morphology within networks associated with attention and language control, consistent with the general principle of neuroplasticity: repeated demands can reshape neural organisation. Yet neural adaptation is not synonymous with superior cognition. The brain changes in response to experience for many reasons, including compensation for difficulty, efficient automation of routines, or reallocation of resources across tasks. The most defensible synthesis therefore abandons the binary framing of “bilingual versus monolingual” and adopts a multidimensional *spectrum* approach, in which proficiency, age of acquisition, frequency of switching, interactional context, and language dominance are treated as predictors rather than ignored as nuisance variation. Under this reframing, the question is not whether bilingualism produces a universal advantage, but which bilingual profiles, under which task demands, yield measurable differences—and how those differences should be interpreted without turning nuanced evidence into policy slogans.

Questions 27–31

Select the correct answer.

27 What is the passage mainly concerned with in discussing the “bilingual advantage”?

A general intelligence across all domains
B particular processes involved in executive control
C faster childhood language acquisition only
D superior vocabulary memory in every setting

28 According to the passage, why do findings on the bilingual advantage often conflict?

A researchers use identical methods that produce the same outcomes
B bilinguals never show any differences on control tasks
C variation in task design, sample size and analytical decisions
D publication bias prevents any positive results from appearing

29 What difficulty is mentioned when comparing bilinguals with monolinguals?

A background factors may differ and also affect cognitive performance
B participants are always drawn from the same communities
C reaction-time tasks cannot be measured reliably
D bilingualism is too rare to study meaningfully

30 What does the passage indicate about reports of later dementia symptoms in bilinguals?

A they prove bilingualism alone causes protection
B they have been rejected by all studies
C they are explained solely by genetic differences
D they appear in some studies, but cause-and-effect is difficult to show

31 Which interpretation of bilingualism does the passage favour?

A viewing bilingualism as a continuum of experiences
B treating bilingualism as a simple yes/no category
C ignoring switching frequency as irrelevant
D assuming any advantage applies equally to all bilinguals

Questions 32–36

Choose **TRUE** if the statement agrees with the information given in the text, choose **FALSE** if the statement contradicts the information, or choose **NOT GIVEN** if there is no information on this.

32 The passage suggests that both languages may remain partly active even when a bilingual uses only one language.

33 The passage states that any bilingual advantage is consistently large and straightforward to replicate.

34 The passage presents preregistration as a way of limiting researchers' freedom to choose hypotheses and analyses after a study begins.

35 The passage states that neuroscience findings have fully settled the behavioural debate.

36 The passage recommends that governments should require all children to become bilingual for cognitive reasons.

Questions 37–40

Complete the summary below. Choose **NO MORE THAN TWO WORDS** from the text for each answer.

Evidence and uncertainty in the bilingual advantage debate

The bilingual advantage hypothesis proposes that dealing with competition between languages may strengthen **37** ..... . However, inconsistent results may be partly due to publication bias and the size and composition of **38** ..... . In studies of ageing, delayed dementia symptoms are often attributed to **39** ....., although causality remains uncertain. Many researchers therefore argue that proficiency, age of acquisition and frequency of switching should be treated as **40 .....** rather than ignored as nuisance variation.

Answer Key

27. B
28. C
29. A
30. D
31. A
32. TRUE
33. FALSE
34. TRUE
35. FALSE
36. NOT GIVEN
37. executive control
38. samples
39. cognitive reserve
40. predictors