Same JLPT, Different Minds: The Psychological Mechanisms of Native Language, Kanji, Time Pressure, and Test Performance

A data-driven review of cross-linguistic transfer, reading cognition, anxiety, and time management in Japanese-language testing

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Abstract

A JLPT score is usually interpreted as a measure of Japanese proficiency, but test performance is produced by more than stored linguistic knowledge. Native-language structure can facilitate some grammatical interpretations while hindering others; familiarity with Chinese characters can facilitate visual lexical access while also creating semantic interference; reading performance is associated with vocabulary, grammar, decoding, working memory and metacognitive control; and the timed architecture of the JLPT requires examinees to allocate limited attention and minutes across tasks. This review integrates official JLPT specifications with experimental studies of Japanese as a second language and broader second-language psycholinguistic evidence. The central conclusion is not that one language group is globally advantaged. Rather, linguistic distance is multidimensional, and different first-language backgrounds create different cognitive routes through the same test. The paper distinguishes official JLPT design evidence from Japanese-L2 experiments and broader L2 evidence, and does not treat correlations from non-JLPT studies as JLPT effect sizes.

Research question. To what extent can variation in JLPT performance plausibly reflect differences in L1 transfer, kanji processing, reading cognition, anxiety and time allocation - in addition to Japanese proficiency itself?

Evidence rule. Official JLPT documents establish what the test asks examinees to do. Japanese-L2 experiments support mechanisms in Japanese processing. Broader L2 studies are used only as mechanistic analogies; their effect sizes are not estimates of JLPT score effects.

1. Why the JLPT is also a cognitive task

The JLPT is not an untimed diagnostic. In 2026, N1 gives 110 minutes for the combined Language Knowledge + Reading section and 55 minutes for Listening; N2 gives 105 and 50 minutes respectively. N3-N5 separate vocabulary from grammar/reading, but all levels remain strictly timed. For N1 and N2 in particular, the official structure does not prescribe a separate vocabulary, grammar and reading clock inside the combined non-listening section. That means micro-allocation of time is partly delegated to the examinee. [1]

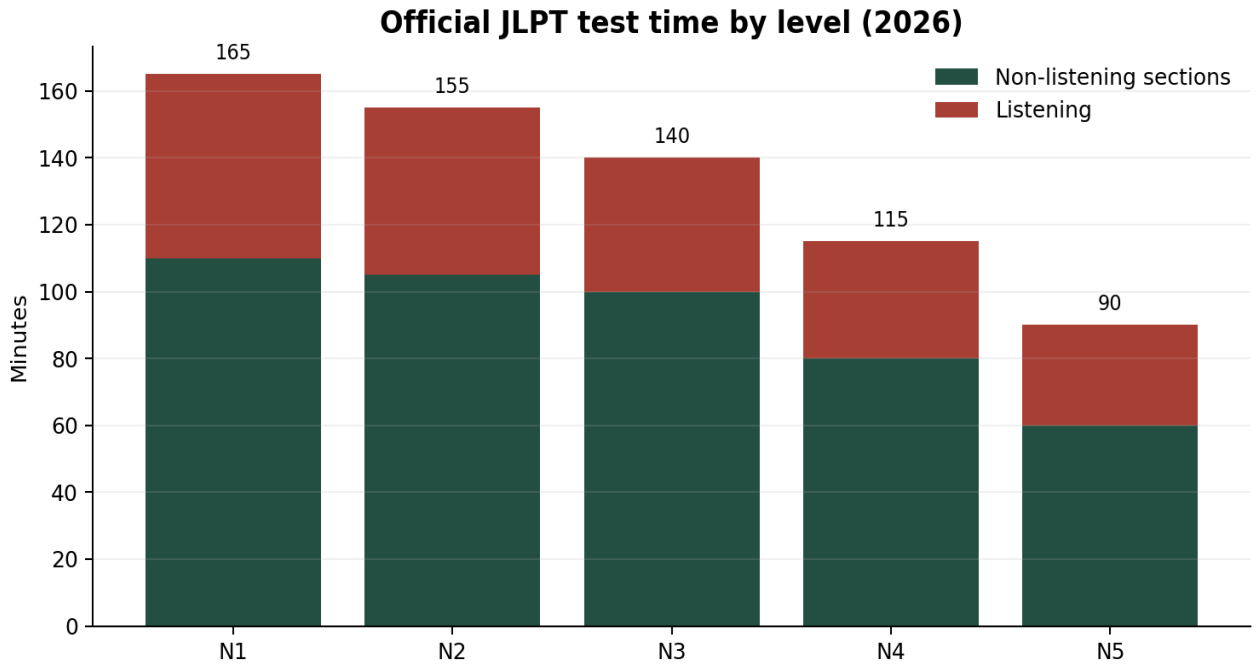

Figure 1. Official JLPT test time by level. Green shows total non-listening time (summing separate non-listening sections for N3-N5); red shows listening. N1/N2 place language knowledge and reading inside one shared non-listening section. Source: JLPT 2026 official guide. [1]

The reading tasks themselves are heterogeneous. The official N1/N2 item descriptions require different operations: local content comprehension, causal or outline tracking, comparison and integration across texts, grasping overall intended points, and information retrieval. Text length is only one property of a task and should not be treated as a proxy for cognitive difficulty. In fact, several N1 and N2 task types have similar nominal lengths, which makes a simple length comparison especially uninformative. [2][3]

JLPT N1/N2 reading is not a single skill - task demands differ

JLPT reading task	Officially targeted operation	Processing emphasis
Short passages (N1/N2)	Understand content in a short text	Local meaning + rapid parsing
Mid-size passages (N1/N2)	Track causal relations/reasons; outline or ideas	Relation building
Long passages (N1 only)	Grasp outline or author's ideas across a long text	Global coherence
Integrated (N1/N2)	Compare and integrate multiple texts	Cross-text synthesis
Thematic (N1/N2)	Grasp overall intended points/ideas	Global stance + abstraction
Information retrieval (N1/N2)	Retrieve needed information from practical documents	Selective scanning

Figure 2. JLPT reading task types target different operations. This is a conceptual map derived from the official item purposes, not a quantitative difficulty scale. Text length alone does not rank the cognitive difficulty of these tasks. [2][3]

2. Native language: not one advantage, but multiple transfer channels

A first language (L1) can alter processing through vocabulary, orthography, syntax, semantics and phonology. Treating “language distance” as one number is therefore misleading. A learner can be close to Japanese in one dimension and distant in another.

2.1 Grammar transfer: a controlled Korean-Chinese comparison

Saito and Tamaoka compared 48 Korean-L1 and 48 Chinese-L1 learners while matching overall Japanese grammatical ability. They tested three semantic domains of the Japanese kara clause: content/reason, epistemic/judgment and speech-act/premise. Korean has corresponding uses in all three domains; Chinese lacks the same speech-act extension. The two groups performed similarly on content and epistemic uses, but diverged sharply on speech-act/premise uses. The L1 × domain interaction was significant (partial η^2=.16), and the between-L1 effect for the premise domain was large (partial η^2=.32). [4]

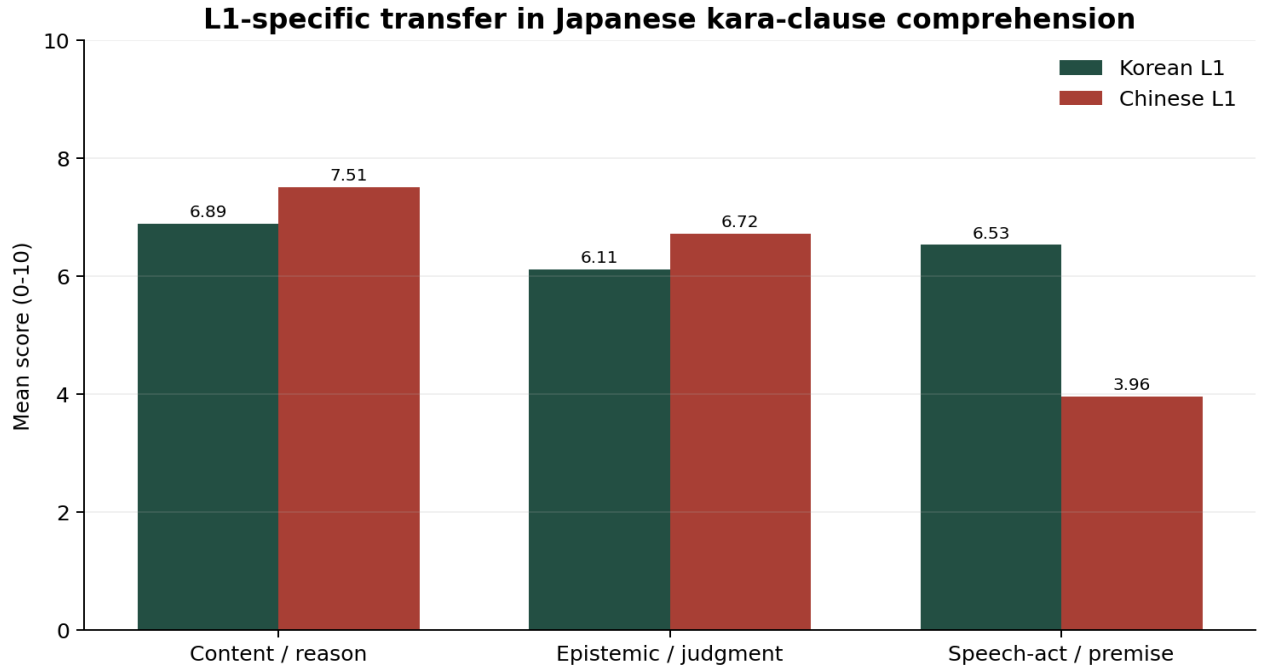

Figure 3. Mean comprehension scores for three kara domains, N=96. Korean and Chinese learners were matched on Japanese grammar ability. The sharp divergence is specific to the speech-act/premise domain, not a general Korean-over-Chinese advantage. [4]

This is exactly why a ranking such as “Korean speakers are better at JLPT grammar” would be scientifically weak. The evidence supports a narrower claim: when a target-language construction maps onto an available L1 semantic-syntactic pattern, processing can be easier; when that pattern is absent, acquisition and test interpretation may remain vulnerable even at comparable overall proficiency. A separate Japanese reading study likewise found different inferencing patterns: Chinese-L1 learners tended to rely more on vocabulary knowledge, while Korean-L1 learners drew on both vocabulary and grammar, with a stronger grammar relationship. [5]

3. Kanji: cognitive shortcut and cognitive trap

For Chinese-background learners, kanji is the clearest place where prior knowledge can reduce processing cost. But the same mechanism can also activate a misleading L1 meaning or pronunciation. The important distinction is therefore facilitation versus interference, not “knows kanji” versus “does not know kanji.”

3.1 The lexical landscape is large enough to matter

A database study of the 20,000 most frequent Japanese words found that Chinese-origin words account for about 50%. Roughly 70% of those Chinese-origin words are isographic with Chinese (about 35% of all 20,000). Among 7,074 isographic words, 82% are similar in both orthography and meaning, while 18% are partially or completely different in meaning. In other words, roughly one out of every five to six isographic items is a potential “looks familiar, means something else” zone. [6]

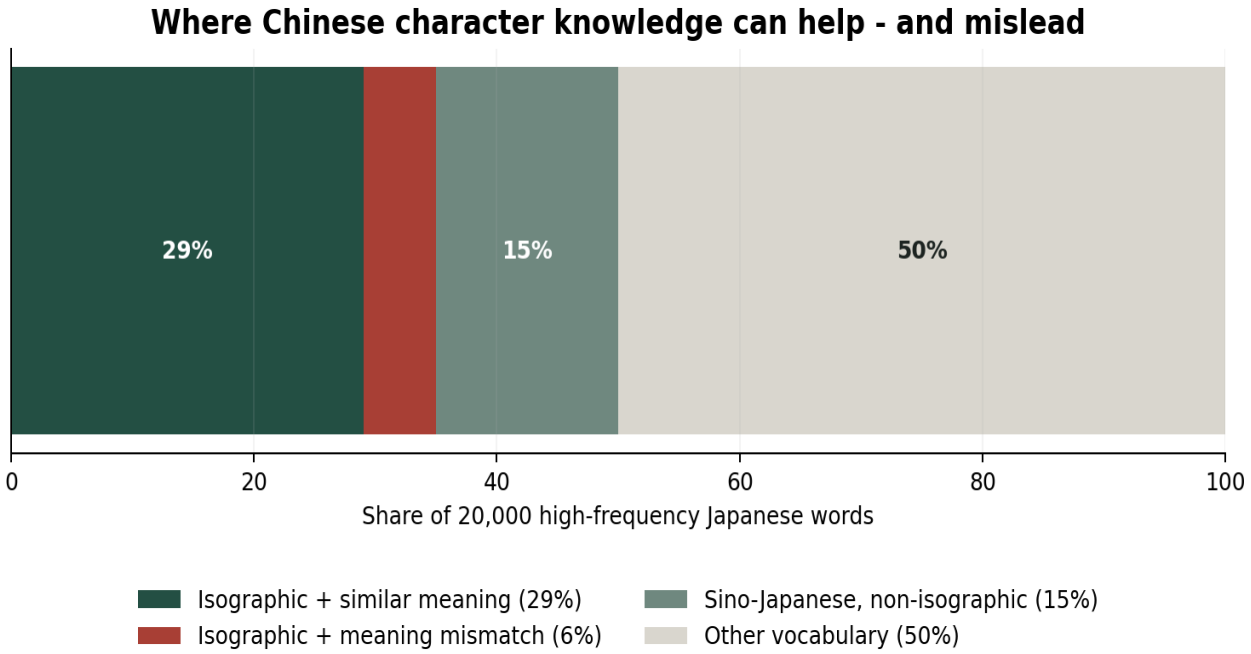

Figure 4. Approximate decomposition of 20,000 high-frequency Japanese words using the Chinese-Japanese vocabulary database. The 6% “meaning mismatch” segment is small relative to the whole lexicon but large enough to create systematic false-familiarity risk. [6]

3.2 Experimental evidence: script similarity helps comprehension much more than it helps everything

Meng compared intermediate Chinese-L1 learners (CLJ, n=46) with proficiency-matched Indonesian-L1 learners (ILJ, n=29) on single-kanji Japanese verbs. For same-meaning/same-form items, CLJ production accuracy was 67.76% versus 43.40% for ILJ. For same-meaning/different-form items, the groups were nearly identical (40.70% vs 41.64%). In comprehension, same-form scores were 10.70/11 (97.27%) for CLJ and 8.00/11 (72.73%) for ILJ. The CLJ within-group effect of orthographic similarity on comprehension was very large (η^2=.62), and the same-form between-L1 effect was η^2=.50. [7]

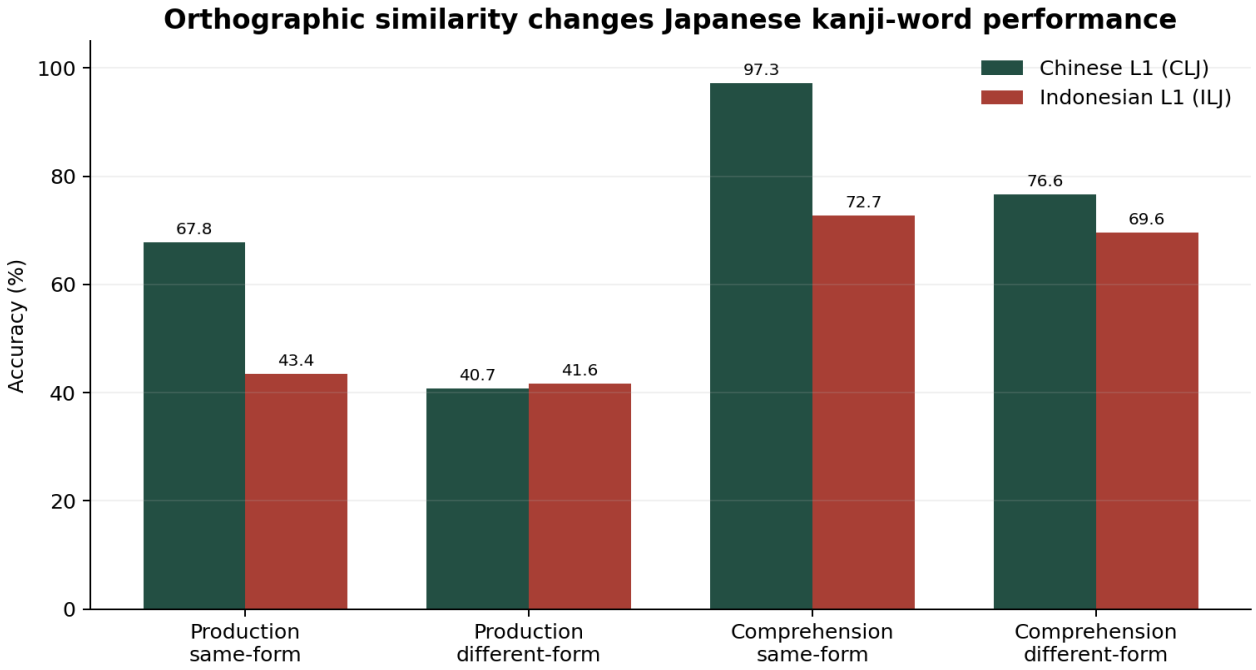

Figure 5. Chinese-L1 versus Indonesian-L1 performance on Japanese single-kanji verbs. Comprehension scores were converted from points out of 11 to percentages for comparability. [7]

This pattern suggests a psychologically important asymmetry: script familiarity can make recognition and meaning access extremely efficient, but productive control is less automatically transferable. The same paper reports L1 competition errors, such as selecting a Japanese verb cued by a Chinese character association rather than the contextually correct Japanese verb. [7]

3.3 Visual advantage does not automatically become listening advantage

Auditory lexical-decision studies with Chinese learners of Japanese show that cross-language orthographic similarity can facilitate recognition even when words are heard, but phonological similarity can produce inhibition under some conditions. Other work on homophone judgments shows that Chinese learners engage phonological control processes differently from native Japanese speakers. [8][9][10] This is a warning against treating a visual kanji advantage as a general advantage across JLPT modalities: cross-language facilitation observed in orthographic processing does not transfer straightforwardly to auditory processing.

4. Reading: a multi-component cognitive bottleneck

Reading is where vocabulary, grammar, decoding, working memory, inference, global coherence and time pressure converge. The meta-analysis by Jeon and Yamashita found strong pooled correlations between passage-level L2 reading and grammar knowledge (r=.85), vocabulary knowledge (r=.79) and decoding (r=.56); metacognition showed a smaller pooled association (r=.32). [11] A separate 2022 meta-analysis covering 74 studies and 228 correlations estimated the working-memory/L2-reading relationship at r=.30. [15] The updated reading-component synthesis also continued to support a multi-component view of L2 reading. [12] These are bivariate associations, not independent causal contributions, and they should not be added together as shares of explained variance.

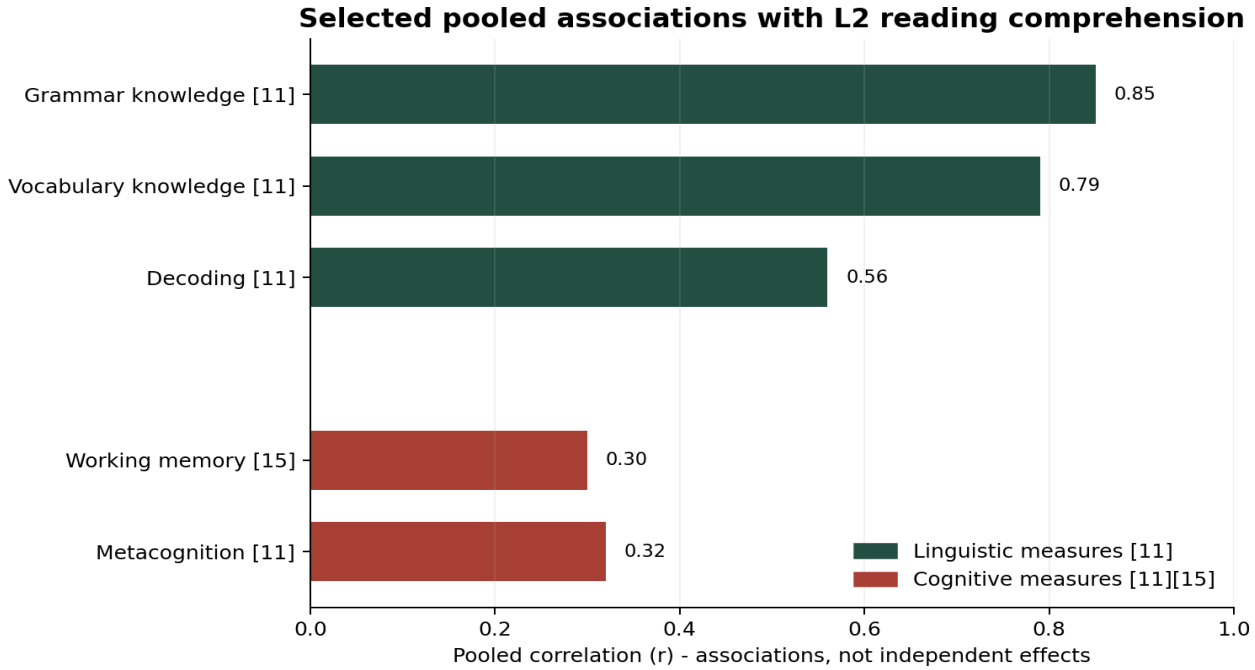

Figure 6. Selected pooled associations with L2 reading comprehension. Grammar, vocabulary and decoding come from the same 2014 synthesis; working memory comes from a broader 2022 meta-analysis, while metacognition was a lower-evidence correlate in the 2014 synthesis. The bars should not be read as independent effects or as JLPT-specific effect sizes. [11][15]

For JLPT interpretation, this matters because a wrong reading answer can arise from multiple bottlenecks: unknown vocabulary, misparsed grammar, failure to maintain a referent over a long sentence, incorrect inference, loss of the author’s global stance, or simply running out of time. The official N1/N2 task design explicitly requires both local and global processing, comparison across texts and information retrieval. [2][3]

5. Time pressure, working memory and anxiety

A recent quantitative study, published online in 2025 and appearing in the 2026 volume of Studies in Second Language Acquisition, examined 96 Hungarian secondary-school learners of English. It is not a JLPT study, so its numbers should not be transferred mechanically to Japanese. Its value is mechanistic: it measured L1 reading, working memory, reading anxiety, response-time anxiety, accuracy and completion time in one timed L2 reading design. [13]

A one-standard-deviation increase in backward digit span (working memory) was associated with 1.16 times the odds of a correct L2-reading response. A one-SD increase in L1 reading comprehension corresponded to odds of 1.07. In the opposite direction, a one-SD increase in reading-input anxiety was associated with an odds ratio of about 0.68 for a correct response, and time/response anxiety with an odds ratio of about 0.72. The conditional R^2 of the model was 23.76%, while fixed predictors alone accounted for 5.63% (marginal R^2); the difference reflects participant/item random effects. [13]

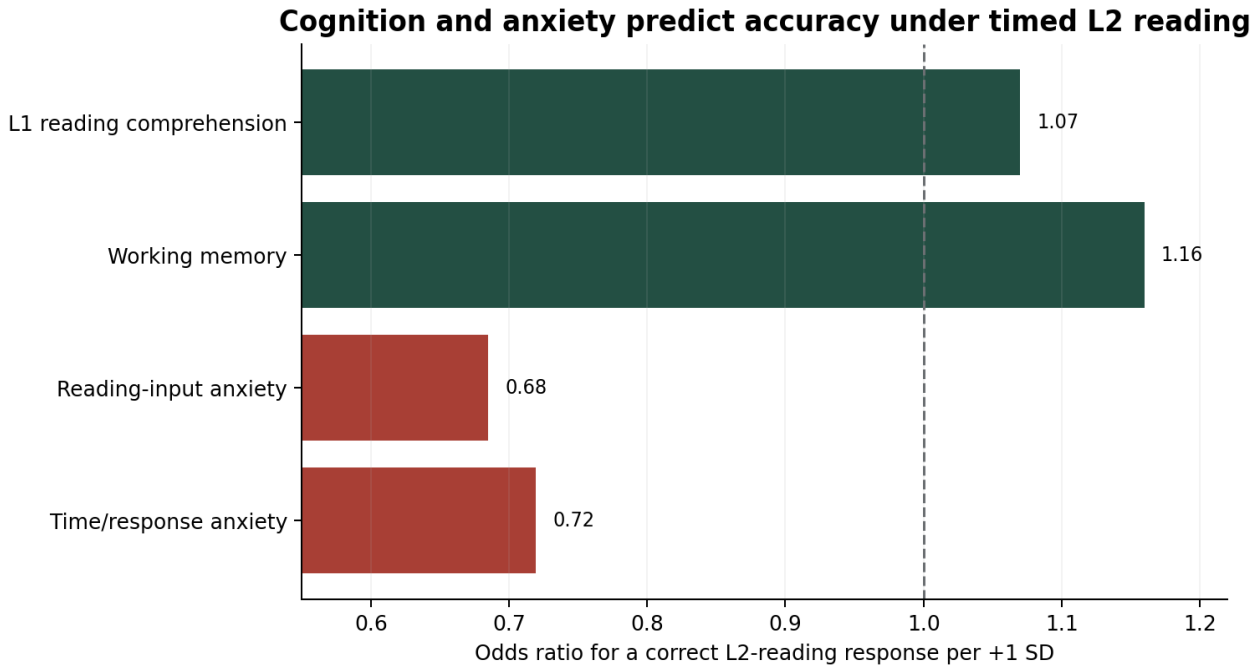

Figure 7. Odds ratios from a timed L2-reading study (N=96). Values above 1 are associated with higher odds of a correct response; values below 1 with lower odds. These are L2-English findings used here as cognitive evidence, not as JLPT effect estimates. [13]

The same study found that reading score, L1 reading score and time/response anxiety significantly predicted completion time; its first regression model explained 14% of reading-time variance. Higher reading-related anxiety was associated with slower completion. [13] For a combined JLPT section, this suggests a plausible feedback loop: anxiety may be associated with slower completion, which may intensify perceived time pressure. The study does not establish that loop causally in JLPT examinees.

5.1 Anxiety is not just “feeling nervous”

A 2019 meta-analysis synthesized 55 independent samples (10,228 participants) and found an overall correlation of r=-.34 between foreign-language anxiety and language performance. Among domain-specific results, listening anxiety showed the strongest negative association with listening performance (r=-.53). The overall anxiety-performance relationship remained broadly stable across proficiency groups. [14] This pattern is consistent with resource-competition accounts in which worry and self-monitoring draw on attention and working-memory resources, but the meta-analysis itself establishes association rather than a single causal mechanism.

Key quantitative evidence at a glance

Finding	Value	Scope
N1 non-listening / listening time	110 / 55 min	Official JLPT [1]
N2 non-listening / listening time	105 / 50 min	Official JLPT [1]
Chinese vs Korean kara premise	3.96 vs 6.53 /10	Japanese-L2 experiment [4]
Isographic Japanese words with meaning mismatch	18% of 7,074 isographic words	Lexical database [6]
CLJ vs ILJ same-form comprehension	97.27% vs 72.73%	Japanese-L2 experiment [7]
L2 reading: grammar correlation	r=.85	Meta-analysis [11]
L2 reading: vocabulary correlation	r=.79	Meta-analysis [11]
L2 reading: working-memory correlation	r=.30	74 studies / 228 correlations [15]

Finding	Value	Scope
Foreign-language anxiety vs performance	r=-.34	55 samples, >10,000 participants [14]
Time/response anxiety and correctness	OR≈0.72 per +1 SD	Timed L2 reading, N=96 [13]

6. A psychological model of JLPT performance

The evidence supports a layered model rather than a single “Japanese ability” explanation:

Layer	Mechanism	Possible JLPT expression	Evidence status
L1 transfer	Shared or absent grammar/semantic structures	Some grammar meanings processed more easily or slowly	Japanese-L2 evidence (Korean/Chinese L1)
Orthographic transfer	Kanji form and meaning activation	More efficient lexical access; false-familiarity errors	Japanese-L2 evidence (mainly Chinese L1)
Phonological transfer	L1/L2 sound representations interact	Auditory word recognition need not mirror visual-kanji processing	Japanese-L2 evidence (Chinese L1)
Reading architecture	Vocabulary + grammar + decoding + inference	Different bottlenecks can yield the same “wrong answer”	General L2 meta-analytic evidence
Working memory	Maintain and integrate information	Limits can constrain integration across sentences and passages	General L2 meta-analytic evidence
Metacognition	Monitor difficulty; decide when to move on	Time allocation inside combined sections	General L2 evidence + JLPT structural inference
Anxiety	Worry/time threat associated with performance	Lower performance and slower completion in L2 studies	General L2 meta-analysis + timed study

The most defensible formulation is therefore: JLPT performance is proficiency expressed through a particular cognitive pathway under time constraints. It is not valid to infer that the test “mainly measures psychology,” but it is equally incomplete to assume that two examinees with identical underlying Japanese knowledge will always obtain identical scores regardless of processing speed, transfer patterns or anxiety.

7. Implications for preparation and future research

For learners. Preparation should diagnose the bottleneck, not merely increase total study hours. Chinese-background learners should explicitly train false friends, kana/phonology and context-sensitive meanings rather than treating kanji familiarity as mastery. Learners from non-kanji backgrounds may need more deliberate work on orthographic automaticity. Korean-background learners can make use of some structural similarities, but the evidence here is construction-specific and should not be generalized to all grammar. For all groups, preparation should include timed reading practice that separates knowledge failures from allocation failures.

For mock-test design. A useful platform should record item-level response time, revisits, answer changes, section position, and first language. With sufficient consented anonymous data, one could test whether (a) kanji-background learners are faster on orthographic items, (b) grammar-background similarity changes particular error types, (c) late-section accuracy declines after controlling for item difficulty, and (d) time pressure has different effects by L1 and proficiency.

For research. The biggest evidence gap is that most psychological findings are not based on official JLPT item-level response data. The next step should be preregistered, multilingual experiments using JLPT-like tasks with matched proficiency and item difficulty, rather than nationality-based comparisons.

8. Limitations

This paper is a structured narrative review, not a meta-analysis of JLPT examinees. Several Japanese-L2 experiments use modest samples and specific constructions or word types. The reading and anxiety meta-analyses are broader L2 evidence and may not generalize in magnitude to Japanese. Correlations cannot establish causal direction: weaker readers may become more anxious, anxiety may impair reading, or both may reinforce each other. Finally, “Chinese,” “Korean,” “Indonesian” and other L1 labels should not be treated as psychological types; literacy history, education, dialect, bilingual experience and proficiency vary within every group.

Conclusion

The same JLPT can impose different processing costs on different learners. Chinese character knowledge can reduce lexical-processing cost but also produce semantic and phonological interference. Structural similarity between Korean and Japanese can facilitate specific grammar mappings, while the absence of an L1 counterpart can create selective difficulty. Reading performance is strongly tied to grammar and vocabulary and is also associated with decoding, working memory, metacognition and anxiety. Because the JLPT is timed - and because N1/N2 place language knowledge and reading inside one shared time budget - test performance can reflect self-regulation as well as knowledge. The fairest interpretation is not that JLPT scores are “biased by psychology,” but that proficiency is always observed through a cognitive system with a history, a language background and a clock.

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