

When nothing matches but abstract structure: Morphological priming without shared form or grammar

^{1,4}Dave Kenneth Tayao Cayado, ²Samantha Wray, ³Jed Pizarro-Guevara, ⁴Linnaea Stockall

¹Royal Holloway, University of London; ²Dartmouth College; ³University of Massachusetts-Amherst; ⁴Queen Mary, University of London

Research in the past 50 years has shown that the initial stage of visual word recognition requires an EARLY DECOMPOSITION PROCESS, where real complex words like *teacher*, pseudocomplex words like *brother*, and morphologically structured novel words like *gasful* are decomposed into possible morphemes (see Cayado & Rastle, 2025 for a review). This suggests a mental lexicon where morphologically complex words are represented as morphological units. The majority of the evidence for this comes from masked morphological priming, where the prime and the target share the same morpheme with overlapping form and grammatical function (e.g., *teacher-TEACH* share the same stem; *teacher-BUILDER* share the same agentive suffix *-er*). It therefore remains an empirical question whether masked priming can be obtained when the morphological relationship between prime and target is independent of form and grammatical function.

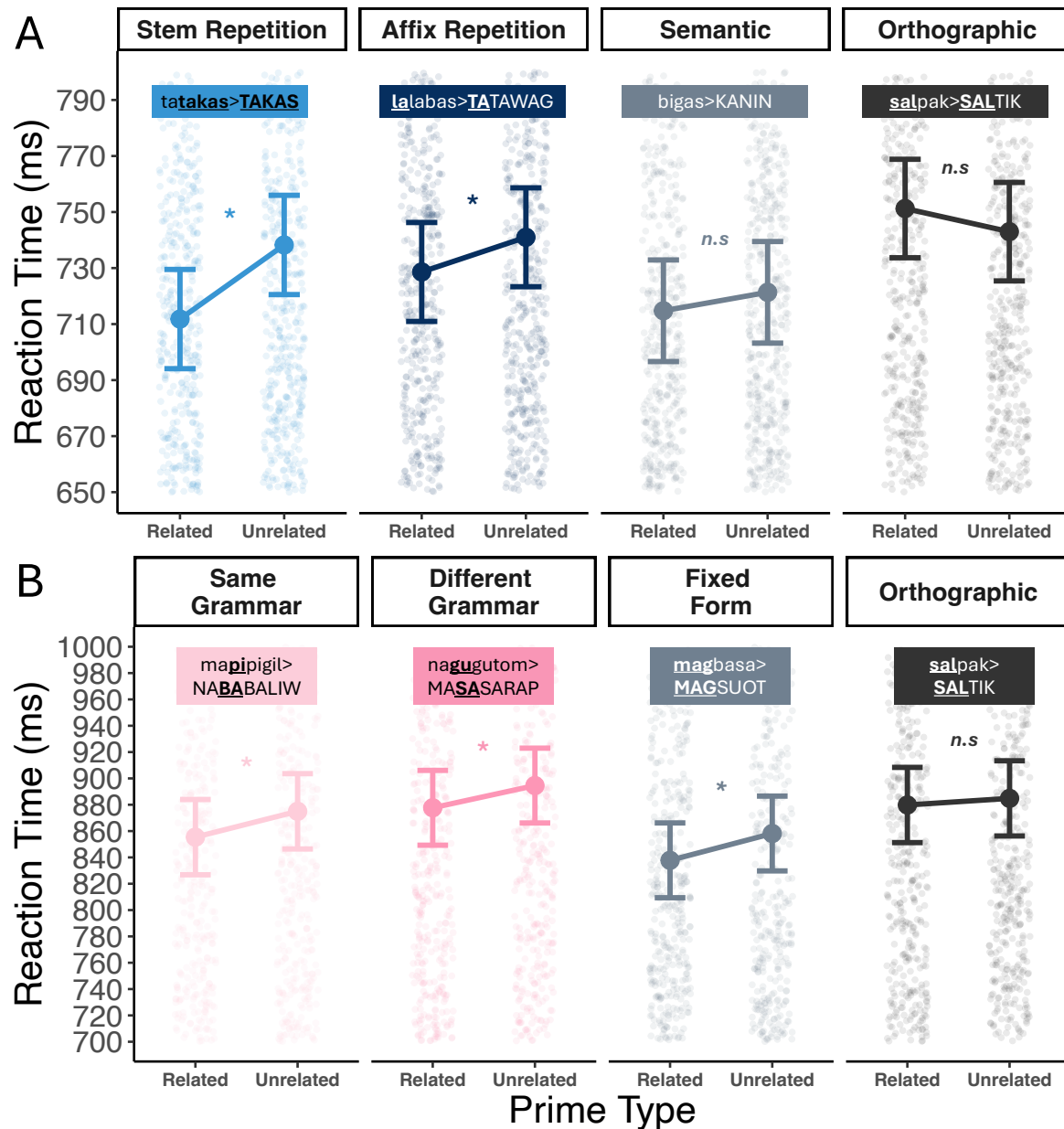
We address this question by looking at partial reduplication in Tagalog, which is a type of morphology with no consistent orthographic or phonological surface form. In partial reduplication, the first consonant-vowel (CV) cluster of the stem is copied and placed before the stem to indicate contemplative aspect. For example, the verbal stems *tawag* ‘call’, *lundag* ‘jump’, and *tinda* ‘sell’ become *tu-tawag* ‘will call’, *lu-lundag* ‘will jump’, *ti-tinda* ‘will sell’, respectively. Partial reduplication can also indicate plural agreement when combined with the *ma-* prefix. For example, the adjectives *ma-ganda* ‘pretty’ and *ma-sipag* ‘hard working’ become *ma-ga-ganda* ‘pretty (plural)’ and *ma-si-sipag* ‘hard working (plural)’.

We conducted two masked priming experiments to investigate whether early morphological decomposition operates on form, grammatical function, or abstract skeletal templates. In Experiment 1, we tested pairs of partially reduplicated words that either share the same stem (STEM REPETITION: *tatakas-TAKAS* ‘will escape-ESCAPE’) or reduplicant morpheme marking contemplative aspect (AFFIX REPETITION: *lalabas-TUTULAK* ‘will go out-WILL PUSH’). In Experiment 2, we examined pairs of partially reduplicated words sharing a reduplicant morpheme either with same grammatical function (SAME GRAMMAR: *mapipigil-NABABALIW* ‘can be stopped-was going crazy’, where the reduplicant marks aspect) or different grammatical function (DIFFERENT GRAMMAR: *magaganda-NATUTULOG* ‘pretty (plural)-WAS SLEEPING’, where the reduplicant marks plurality in the prime and aspect in the target). 80 native Tagalog speakers were recruited for each experiment.

Using linear mixed-effects modelling, Experiment 1 demonstrated significant priming effects for both STEM REPETITION and AFFIX REPETITION conditions (see Figure 1A). Critically, Experiment 2 further revealed robust priming effects for both SAME GRAMMAR and DIFFERENT GRAMMAR conditions (see Figure 1B). These priming effects cannot be attributed to the orthographic and semantic overlap between prime and target (see Figure 1), thereby suggesting that the effects obtained are morphological in nature.

For the first time, these experiments have shown that early morphological processing is much more abstract than what has been previously observed in masked priming studies. Morphemes do not need to share consistent orthographic or phonological surface forms, and can even differ in grammatical function, to facilitate each other’s activation, as long as they share the same abstract phonological template. Specifically, native Tagalog speakers were able segment partially reduplicated words like *magaganda* ‘pretty (plural)’ and *natutulog* ‘was sleeping’ into {ma-}+{-ga-}+{ganda} and {na-}+{-tu-}+{tulog}, respectively, and connect the reduplicants {-ga-} and {-tu-} to the same abstract CV skeletal morpheme, consistent with Marantz’s (1982) proposal. These findings provide direct psycholinguistic evidence for formal linguistic accounts in which the mental lexicon encodes more abstract morphological patterns and templates at a level beyond surface forms and morphosyntactic features (Halle & Marantz, 1993; Stockall & Gwilliams, 2022; Marantz, 1982).

Figure 1. Masked priming effects across experiments. (A) Reaction time (in ms) across conditions in Experiment 1. (B) Reaction time (in ms) across conditions in Experiment 2.



References

- Cayado, DKT., & Rastle, 2025. (Under Review). The cost of a narrow lens: why morphological processing and learning research needs more languages. [\[preprint\]](#).
- Halle, M., & Marantz, A. (1993). Distributed Morphology and the Pieces of Inflection. In: K. Hale, & S. Jay Keyser, (Eds.), *The view from building 20* (pp. 111-176). Cambridge, MA: MIT Press.
- Marantz, A. (1982). Re Reduplication. *Linguistic Inquiry*, 13(3), 435–482. <https://www.jstor.org/stable/4178287>
- Stockall, L., & Gwilliams, L. (2022). Distributed morphology and neurolinguistics. *Lingbuzz*. <https://lingbuzz.net/lingbuzz/006928>