

The Facilitatory Effect of Phonological Priming on Visual Word Recognition in Arabic as a Function of Lexicality and Overlap Positions

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Abstract : An experiment was designed to assess the performance of 24 Lebanese adults (mean age 29:5 years) in a lexical decision making (LDM) task to find out how the facilitatory effect of phonological priming (PP) affects the speed of visual word recognition in Arabic as lexicality (wordhood) and phonological overlap positions (POP) vary. The experiment falls in line with previous research on phonological priming in the light of the cohort theory and in relation to visual word recognition. The experiment also departs from the research on the Arabic language in which the importance of the consonantal root as a distinct morphological unit is confirmed. Based on previous research, it is hypothesized that (1) PP has a facilitating effect in LDM with words but not with nonwords and (2) final phonological overlap between the prime and the target is more facilitatory than initial overlap. An LDM task was programmed on PsychoPy application. Participants had to decide if a target (e.g., bayn 'between') preceded by a prime (e.g., bayt 'house') is a word or not. There were 4 conditions: no PP (NP), nonwords priming nonwords (NN), nonwords priming words (NW), and words priming words (WW). The conditions were simultaneously controlled for word length, wordhood, and POP. The interstimulus interval was 700 ms. Within the PP conditions, POP was controlled for in which there were 3 overlap positions between the primes and the targets: initial (e.g., asad 'lion' and asaf 'sorrow'), final (e.g., kattab 'cause to write' 2sg-mas and rattab 'organize' 2sg-mas), or two-segmented (e.g., namle 'ant' and nahle 'bee'). There were 96 trials, 24 in each condition, using a within-subject design. The results show that concerning (1), the highest average reaction time (RT) is that in NN, followed firstly by NW and finally by WW. There is statistical significance only between the pairs NN-NW and NN-WW. Regarding (2), the shortest RT is that in the two-segmented overlap condition, followed by the final POP in the first place and the initial POP in the last place. The difference between the two-segmented and the initial overlap is significant, while other pairwise comparisons are not. Based on these results, PP emerges as a facilitatory phenomenon that is highly sensitive to lexicality and POP. While PP can have a facilitating effect under lexicality, it shows no facilitation in its absence, which intersects with several previous findings. Participants are found to be more sensitive to the final phonological overlap than the initial overlap, which also coincides with a body of earlier literature. The results contradict the cohort theory's stress on the onset overlap position and, instead, give more weight to final overlap, and even heavier weight to the two-segmented one. In conclusion, this study confirms the facilitating effect of PP with words but not when stimuli (at least the primes and at most both the primes and targets) are nonwords. It also shows that the two-segmented priming is the most influential in LDM in Arabic.

Keywords : lexicality, phonological overlap positions, phonological priming, visual word recognition

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