Recently, Nespor et al (2003) have argued that consonants play a more important role at the lexical level than vowels. This proposal has received direct support from studies showing that 16/20/30-month-old infants are better at processing specific consonantal than vocalic information while learning new words (Nazzi, 2005; Nazzi & New, 2007). This proposal is also supported, although indirectly, by studies on adults. Adults have been found to rely more on consonants than on vowels when asked to transform a nonword into a real word (Cutler et al., 2000). Moreover, adults presented with a continuous stream of syllables are able to segment it into "lexical units" by relying on consonantal but not vocalic information (Bonatti et al., 2005). In our study, we directly investigate this issue using a visual masked priming lexical decision task (an oral version being currently implemented). The test items are bisyllabic (CVCV or VCVC) and trisyllabic (CVCVCV or VCVCVC) words, which are presented following four different primes: identity (e.g., joli-joli), unrelated (vabu-joli), same consonants (jalu-joli) and same vowels (vobi-joli). Priming was found for the identity and same consonants conditions, not for the same vowels condition, supporting the privileged role of consonants at the lexical level.