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Stepping out of the Chinese Room: Word meaning with and without consciousness

What role does consciousness play in word meaning's construction? As previous masked priming experiments have pointed out, subliminal words can affect the processing of other semantically related words (cat-dog). This effect has been taken as evidence that lexical items can be processed up to the semantic level, even when unconsciously perceived. We will refer to this perspective as the semantic-based account of masked priming, as it assumes the activation of conceptual knowledge within the semantic memory.

However, unconscious priming may be alternatively explained through predictive relationships between words' forms established in language use, whose referents are in turn related within the semantic system. Thus, under the wordform-based account, semantic masked priming may not involve any conceptual representation, similarly to Searle's Chinese Room thought experiment. Conversely, the locus of the effect would be the lexical system, whose items are organized according to regularities based on how words are use in natural language.

To distinguish wordform-based and semantic-based accounts of priming, we took advantage from the metaphor linking space to time. Time is mapped onto space both along the sagittal (past is back, future is ahead) and the lateral axis (past is left, future is right). However, only the former mapping is linguistically encoded, in expressions like "leave the past behind"or "the future is in front of you". Consequently, only the sagittal association is likely to be represented in the lexical system, in terms of wordform-wordform association.

We tested the space-time metaphor through a priming experiment with temporal words following spatial words that were shown either consciously or unconsciously. Participants were asked to decide whether temporal words refer to either the past or the future.
Temporal targets were primed by both lateral and sagittal words when primes were consciously perceived. However, only the sagittal words led to priming effect when primes were made subliminal.

According to our data, when people read words consciously, they activate related word-forms and conceptual representations of words referents. Yet, when people process word forms out of awareness, activation only spreads to other word forms. Unconscious semantic processing may thus be limited to wordform-wordform relationships, whereas awareness may be necessary for higher-level semantic information to be activated.

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