Homograph processing in single-word context

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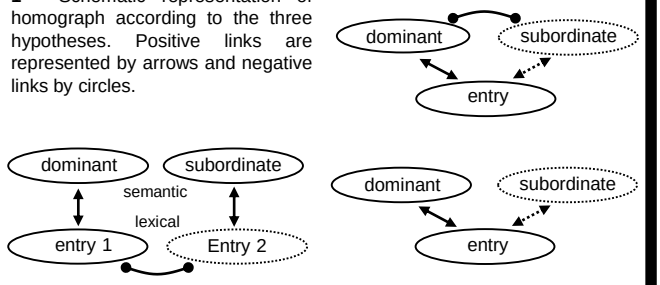
Lexical context effect on homophonic homographs processing was investigated in order to determine homographs representation in memory. A first hypothesis assumes different lexical entries for each meaning of a given homograph and a competition between these entries (Kellas et al., 1988). Two other hypotheses assume a common entry for the meanings and can be distinguished by the absence (Twilley & Dixon, 2000) or the presence (Kintsch, 1988; Gottlob et al., 1999) of active competition between the meanings (see Fig. 1).

Competition between representations would result in the deactivation of the less frequent meaning or the context-inappropriate one, whereas absence of competition would permit exhaustive access to all the meanings. Competition should also result in a slower processing time of homograph in subordinate context.

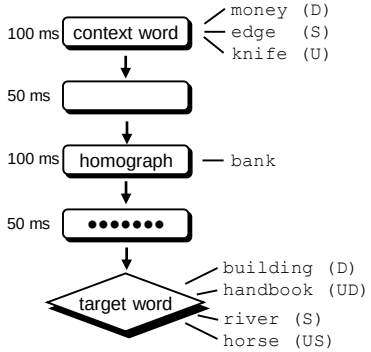
1 - Schematic representation of homograph according to the three hypotheses. Positive links are represented by arrows and negative links by circles.



Lexical context effect on homograph meaning access

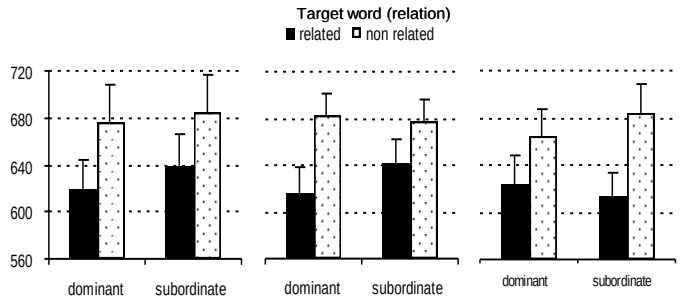
Method

The critical stimuli were 24 French word triples comprising a context word, a polarized homograph and a target word. The context word was semantically related either with the dominant (D) or the subordinate meaning (S) of the homograph, or was unrelated (U). The target word was related to the dominant (D) or the subordinate meaning (S). Each related target word was matched with an unrelated word (UD & US). Subjects performed a lexical decision task on the target.



2 - Structure of a trial and example of test stimuli.

Results



3 - Mean lexical decision time and standard error (in ms) as a function of the target word for the three types of context.

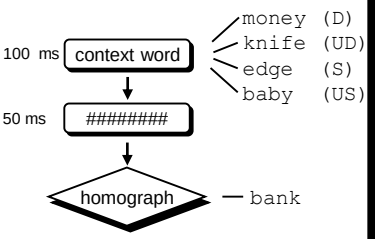
- For each context, both related targets show a significant facilitation.
- Facilitation was similar for dominant and subordinate target in unrelated context.
- Interaction between Relative frequency and Relation was significant in the dominant context, but do not reach statistical significance in subordinate context

↓ Lexical context can constrain homograph meaning access, without resulting in the inhibition of context-inappropriate meaning.

Lexical context effect on homograph identification time

Method

The critical stimuli were 24 word pairs comprising a context word and a polarized homograph as the target word. The context word was related either with the dominant (D) or the subordinate meaning (S). Each context word was matched with an unrelated control word (UD & US).

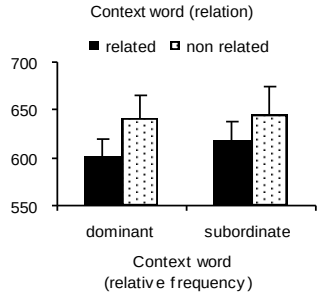


4 - Structure of a trial and example of stimuli.

Results

- Lexical decision times were shorter in related context.
- Interaction between relation and relative frequency of context was not significant.

↓ Identification of homograph is not slowed down in context related to the subordinate meaning (no subordinate bias effect, cf. Binder & Rayner, 1999 ; Vu & Kellas, 1999)



5 - Mean lexical decision time and s.e. (in ms) as a function of the context word.

Conclusion

Both meanings of homograph are accessed whatever the nature of prior lexical context. Moreover, early processing of homograph is not slowed down when the prior lexical context is related to its subordinate meaning.

These results support the assumption of an unique lexical entry for homographs together with the absence of mutual inhibition between its meanings. In so far as there is no competition in the mental lexicon, additional mechanisms based on textual contextual information seems to be required to permit lexical ambiguity resolution.