
# Effects of semantic ambiguity in bilingual processing

## *Number, dominance and semantic similarity of translation equivalents*

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# General Factors that influence translation process

- ✓ Language proficiency
- ✓ Context of use
- ✓ Translation situations
- ✓ Language proximity
- ✓ Word characteristics

# Word characteristics

## Intralingual factors

word frequency, concreteness, homography

## Interlingual factors

Number of translations, dominance of the translations and interlingual homography

# Relation between translation equivalents

## *Words with one translation*

**Words with one meaning and one translation**

- ✓ ARBRE *TREE*

**Words with many meanings but only one translation**

- ✓ DRÔLE *FUNNY*

## *Words with more than one translation*

**Words with one meaning but many translations**

- ✓ BATEAU *BOAT* *SHIP*

**Words with many meanings and many translations**

- ✓ FEMME *WOMAN* *WIFE*

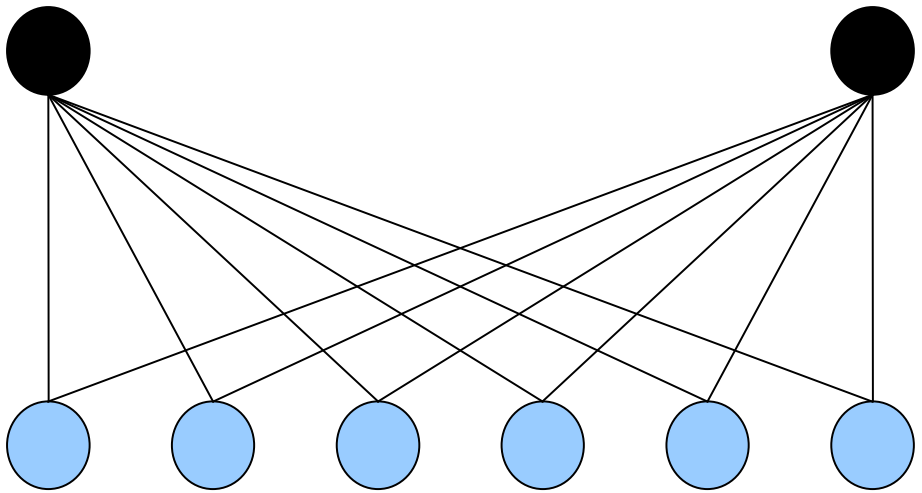
# Model of distributed representations of bilingual memory (De Groot, 1992)

***Concrete words***

**Father** **Père**

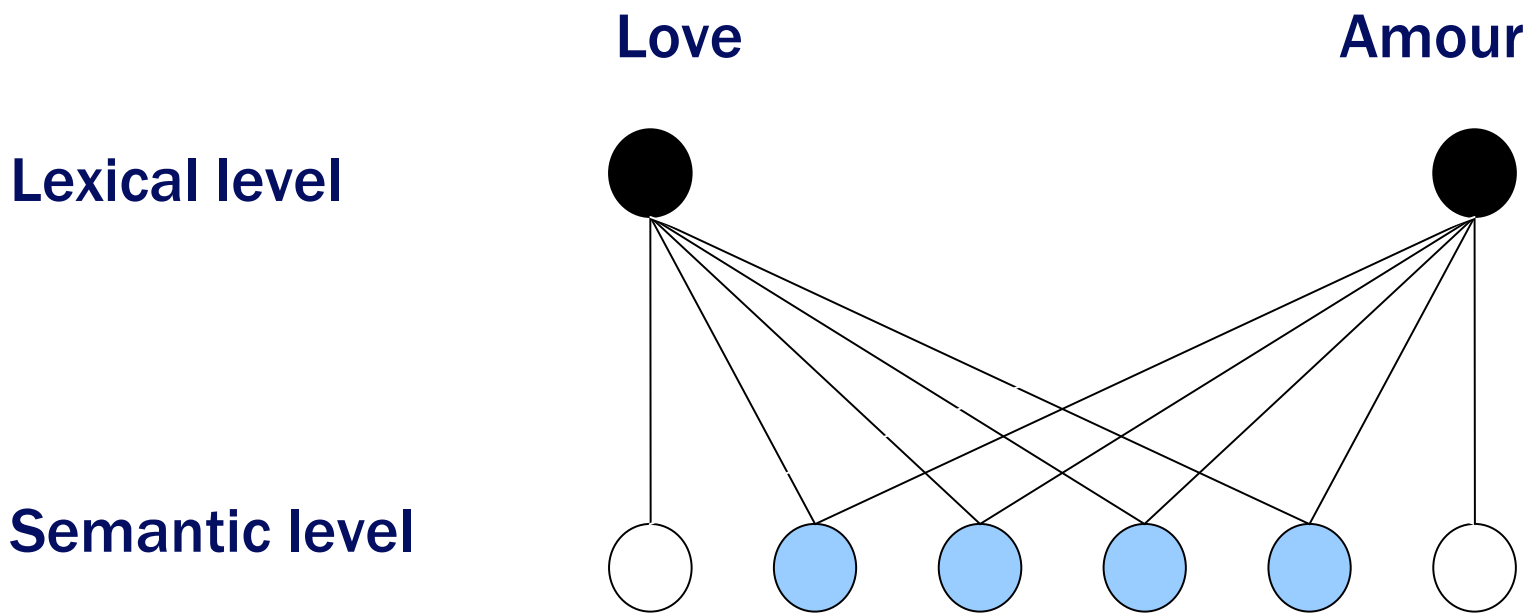
**Lexical level**

**Semantic level**



# Model of bilingual memory

***Abstract words***



# Goals

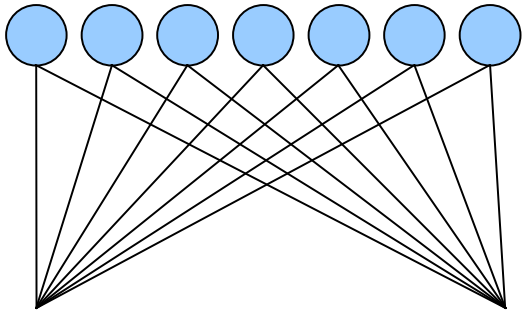
- ✓ Detect semantic factors that influence relations between translation equivalents and thus, in part, determine the performance in out-of-context translation.

**Impact of three interlingual factors**

- ✓ ***number*** of translations (experiments 1 & 2)
- ✓ ***dominance*** of these translations (experiments 1 & 2)
- ✓ ***semantic similarity*** between the multiple translations (experiment 2)

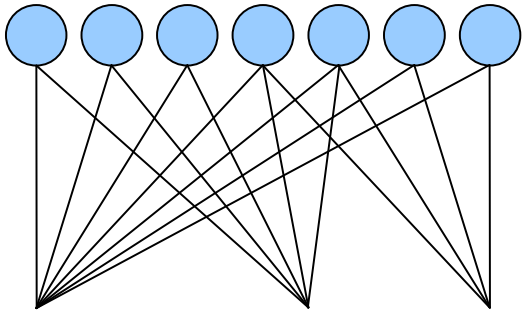
# Adaptation of the Bilingual Distributed Features Model (De Groot, 1992)

**One translation**



**ARBRE** **TREE**

**More-than-one translations**



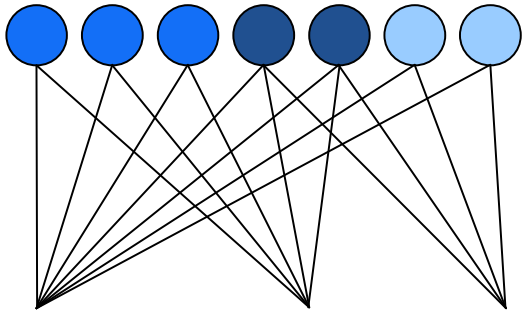
**FEMME** **WOMAN** **WIFE**

**dominant** **non-dominant**

*Hypothetical representation of semantical nodes shared by the translation equivalents for words with one or more-than-one translations.*

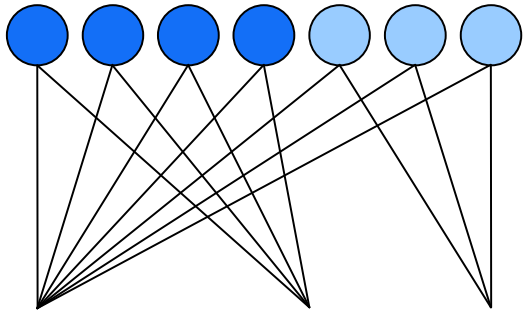
# Adaptation of the Bilingual Distributed Features Model (De Groot, 1992)

- ✓ **Semantically similar**



**BATEAU** **BOAT** **SHIP**
**dominant** **non dominant**

- ✓ **Semantically dissimilar**



**TEMPS** **TIME** **WEATHER**
**dominant** **non dominant**

*Hypothetical representation of semantical nodes shared by the translation equivalents for words with more than one translation equivalents of which one dominant (D+) and one non dominant (D-).*

# Experiment 1: Method

## *Factors/ hypotheses*

**Number-of-translations**

- ✓ One translation < More-than-One translation

**Dominance of the translations**

- ✓ Dominant translation < non-dominant translation

## *Participants*

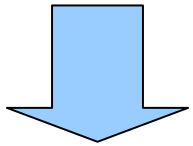
32 native speakers of French students of English at the University of Montpellier (France)

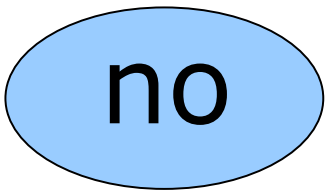
# Experiment 1: Method

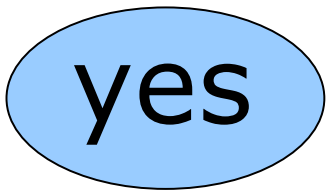
## *Material*

| | Translation Equivalents | | |
|---|---|---|---|
| | One translation pairs | More-than-One translation pairs | |
| | | **Dominant** | **Non-dominant** |
| **L1-L2** | **28**<br>**Lait-Milk** | **28**<br>**Femme-Woman** | **28**<br>**Femme- Wife** |
| **L2-L1** | **28**<br>**Moon-Lune** | **28**<br>**Nail - Ongle** | **28**<br>**Nail - Clou** |

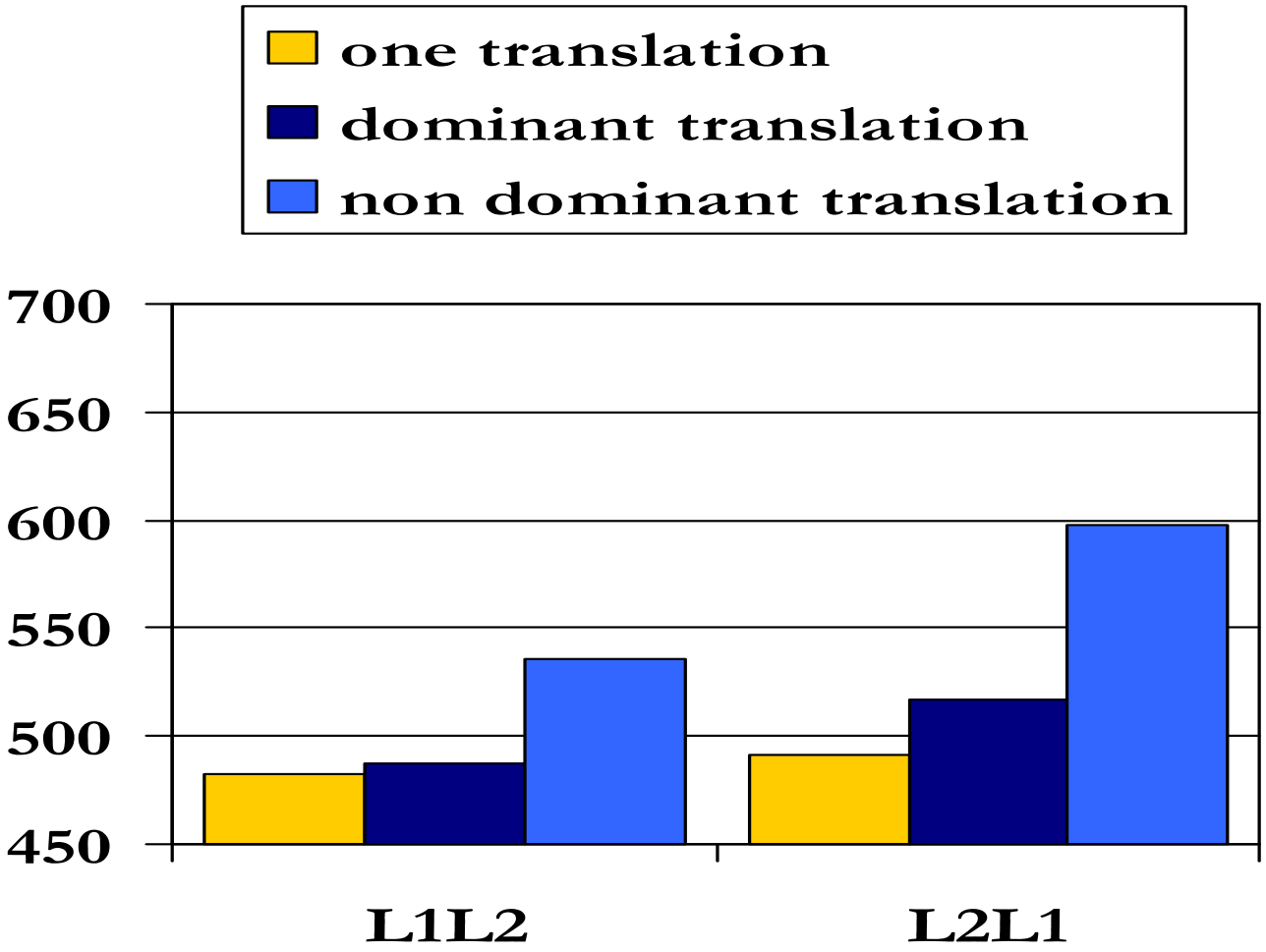
# Experiment 1: Translation recognition task





# Experiment 1: Results




Experiment 1 : *Mean reaction times (msec) for each direction of translation (L1L2 & L2L1)*

# Experiment 2: Method

## Factors / hypotheses

- ✓ Number-of-translations
  - ✓ One translation < More-than-One translation
- ✓ Semantic similarity of translations
  - ✓ Semantically similar < Semantically dissimilar

## Participants

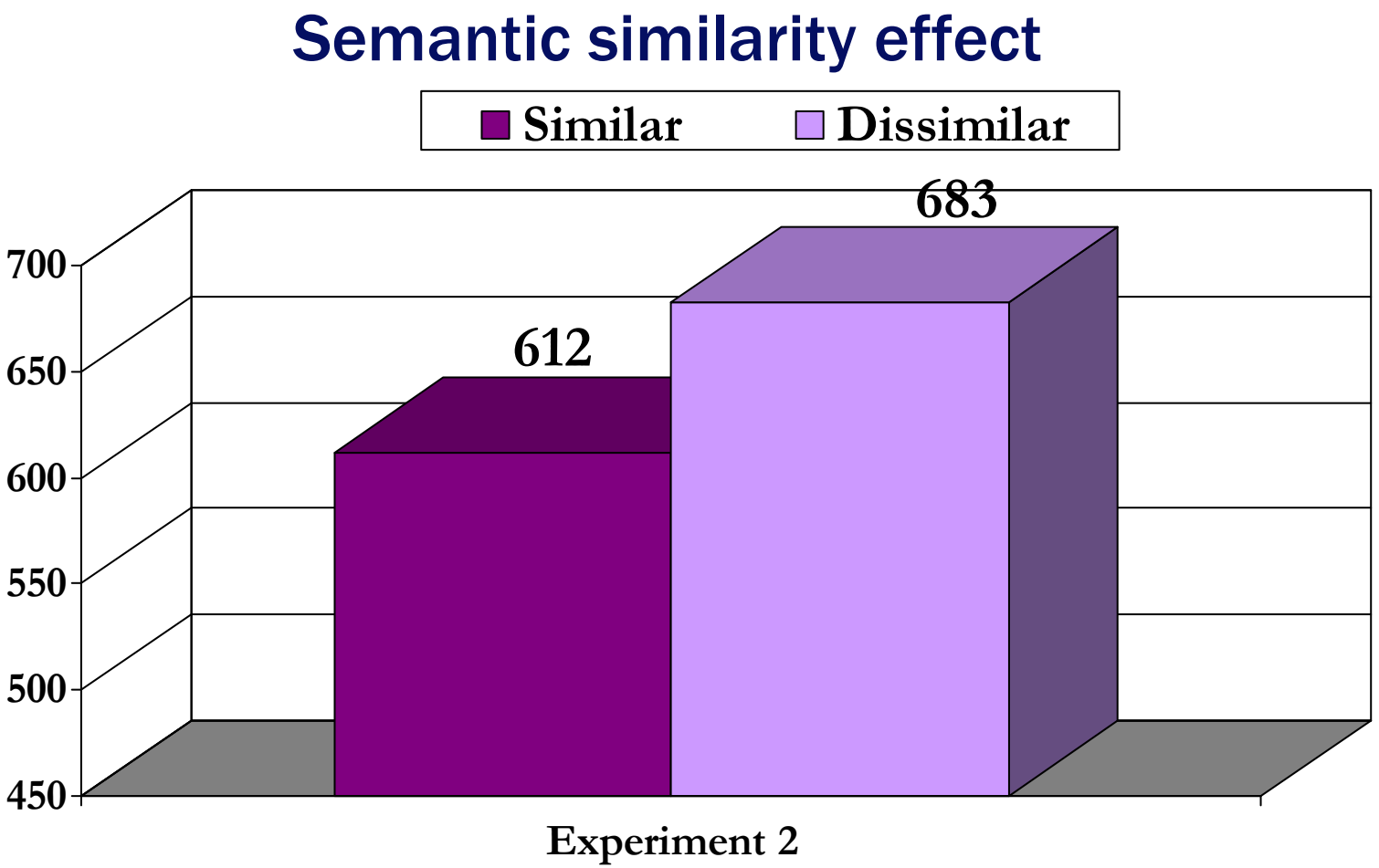
24 native speakers of French, students of English at the University of Montpellier (France)

# Experiment 2: Method

## *Material*

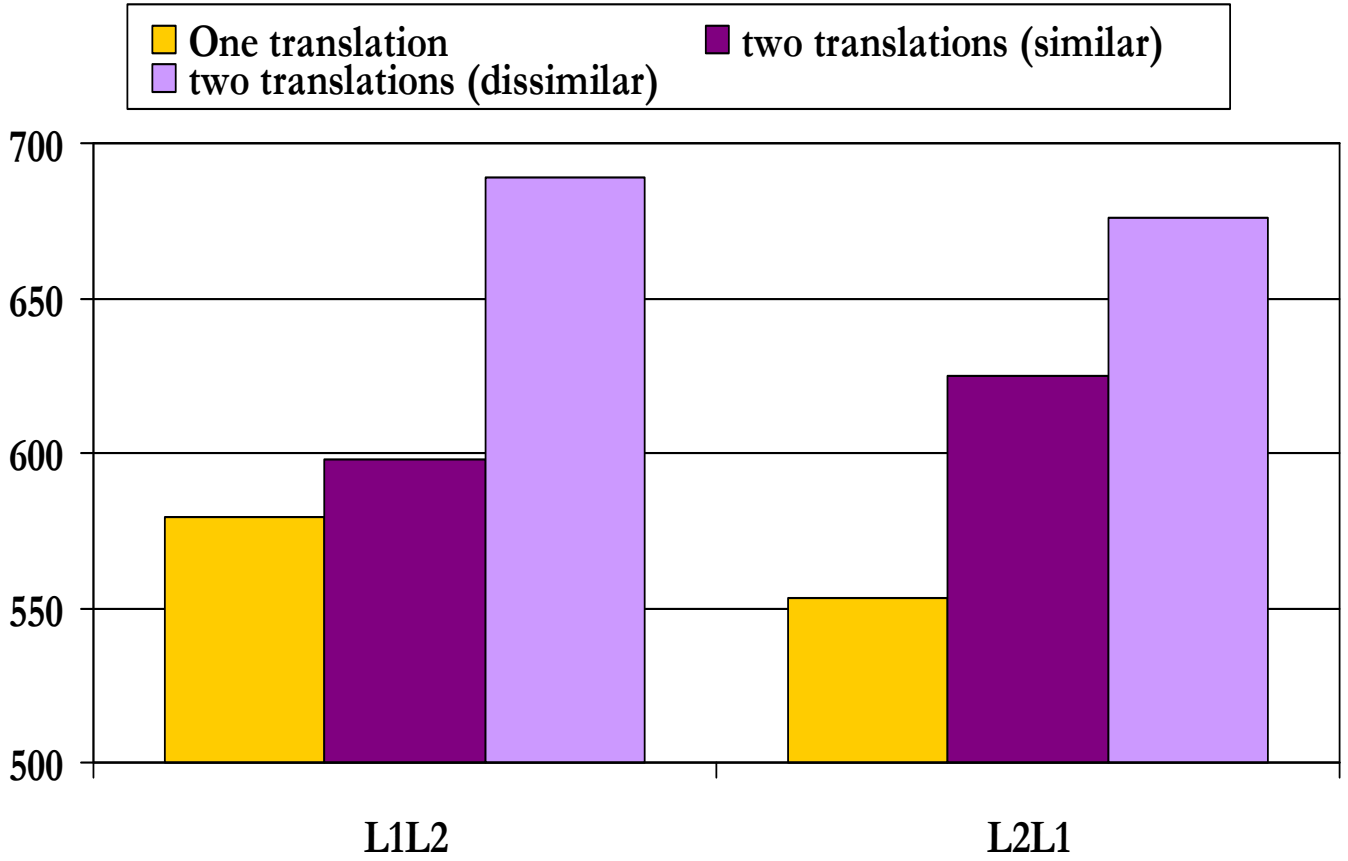
| | Translation Equivalents | | |
|---|---|---|---|
| | "One translation" pairs | "More-than-One" translation pairs | |
| | | Similar | Dissimilar |
| L1-L2 | 20<br>Lait-Milk | 10<br>Maison – House<br>Maison - Home | 10<br>Argent – Money<br>Argent - Silver |
| L2-L1 | 20<br>Moon-Lune | 10<br>Husband- Mari<br>Husband -Epoux | 10<br>Nail – Ongle<br>Nail - Clou |

# Experiment 2: Results



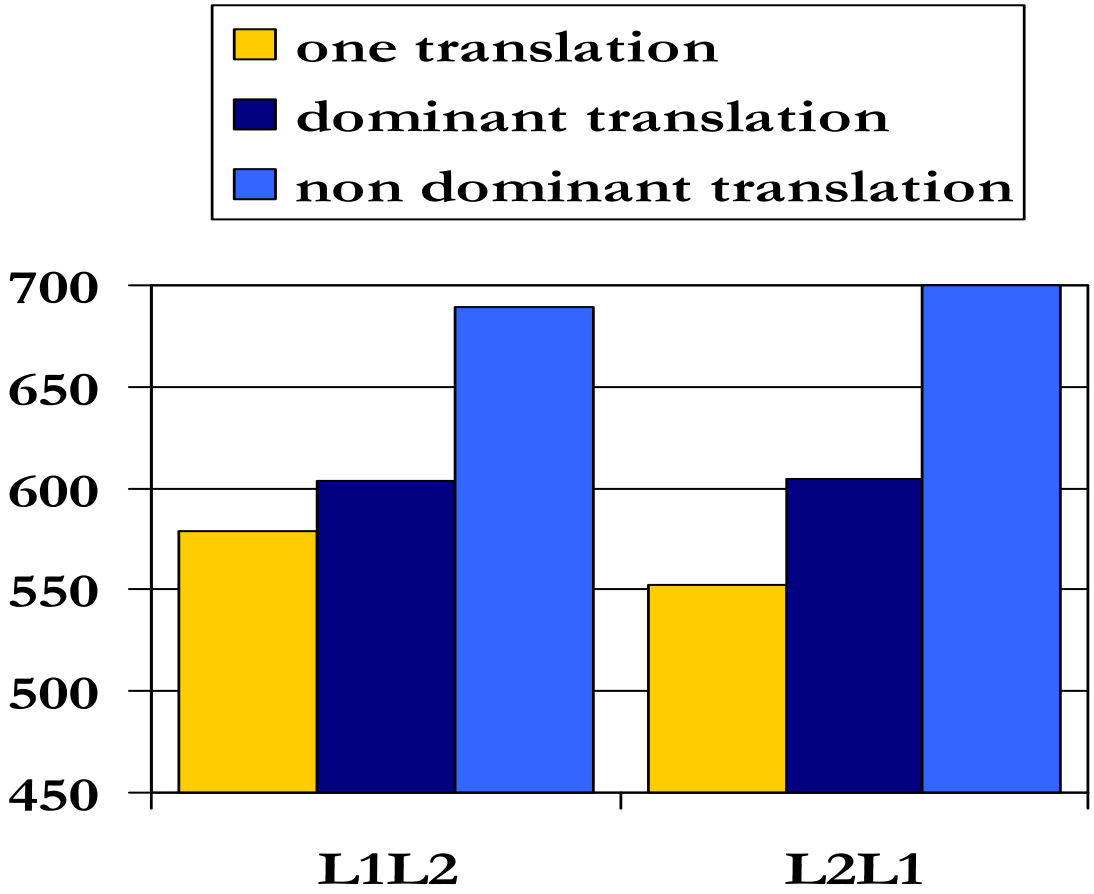

Experiment 2 *Mean reaction times (msec) for the two types of translation equivalents (similar, dissimilar)*

# Experiment 2: Results




Experiment 2 : *Mean reaction times (msec) for the two directions of translation (L1L2, L2L1)*

# Experiment 2: Results




Experiment 2 : *Mean reaction times (msec) for the two directions of translation (L1L2, L2L1)*

# Discussion

**Our results confirm our hypotheses**

- ✓ ***words with one translation*** **are processed faster than** ***words with more-than-one translations.***
- ✓ ***dominant translations*** **are also processed faster than** ***non-dominant translations*****.**
- ✓ ***words with two semantically similar translations*** **are processed faster than** ***words with two semantically distant translations*****.**

# Discussion

Despite the complexity of relations between translation equivalents, the bilingual semantic memory remains efficient

# Conclusion

- ✓ The more the translation equivalents share features (hypothetically) at the semantic level the faster the translations are recognized

  (One translation< Dominant translation< Non-dominant translation)

- ✓ The similar results in both directions of translation can be taken as an argument in favour of the hypothesis that both translation directions use the semantic route of translation.

# Thank You
# for your attention

**Merci, Kiitos, Tack, Gracias, Grazie**
**etc...**