Mapping novel L2 words into the mental lexicon: Evidence from early L2 learners

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Introduction

- Models of L2 word representation and bilingual memory organization
- Testing models experimentally
- Factors of influence during novel L2 word learning
- Discussion / Summary
Why learn new L2 words?

Zur Anzeige wird der QuickTime™ Dekompressor „benötigt.
Models of L2 word representation

- Weinreich (1953)
- Potter et al. (1984)
- Kroll & Stewart (1994)
Model of bilingualism (Weinreich, 1953)

- Concept
- Word
- Coordinate
- Compound
- Subordinate

L1 and L2 represent languages.
Model of lexical representation (Potter et al., 1984)

**Word association model**
- L1 word form: Fenster
- L2 word form: window

**Concept mediation model**
- L1 word form: Fenster
- L2 word form: window

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- Testing models
- Factors of Influence
- Discussion
Revised Hierarchical Model (Kroll & Stewart, 1994)

RHM (adapted from Kroll & Stewart, 1994)

- **L1**
- **L2**
- **Concepts**

**Lexical Links**
- Between L1 and L2

**Conceptual Links**
- Between L1 and Concepts
- Between L2 and Concepts
- Between L1 and L2 (dashed line)

**Language-Specific Word Forms**
- Between L1 and L2

**Language Non-Specific Conceptual Store**
- Between Concepts

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Testing models

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Testing the RHM

Lexical decision task (comprehension)  Translation task (production)
Research considerations

Specific factors/variables have been found to influence the performance of participants and …

… failing to control these may lead to confounds.

- **experimental variables:**
  stimuli length, frequency, orthographic neighborhood size etc.

- **participant variables:**
  age, sex, IQ, AoA, length of instruction, language proficiency, SES etc.
Poarch, Van Hell, & Kroll (2015)

Participants

60 Dutch beginning learners of L2 English (5th grade)

Mean Age = 10.6 (SD = 0.5)

Length of English instruction = 8 months / 2h per week
The different word pairs allow testing the predictions made by the RHM regarding lexical and conceptual links during translation.
Predictions by the RHM

beginning L2 learners

If L2 word-to-concept link is \textbf{weak}, then performances on semantically-related and unrelated pairs \textbf{will not} differ.

advanced L2 learners

If L2 word-to-concept link is \textbf{stronger}, then performances on semantically-related and unrelated pairs \textbf{will} differ.
Experiment 2: conditions

Translation Production Task

L1 → L2
forward translation

eend → ???

L2 → L1
backward translation

duck → ???

Factors of Influence
Predictions by the RHM

L2 word-to-concept link is still **weak**: thus (direct) lexical mediation.

L1 words automatically active their concepts: thus concept mediation.
Results

Supplemented version of the RHM

Exp. 1

Exp. 2

L1

L2

concepts

lexical links

conceptual links

conceptual links

Supplemented version of the RHM

Task demands

Learning context/method

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Factors of influence in L2 word learning

Which factors influence word learning?

Learning method:
- picture-based vs. word-based method

Word status
- cognates vs. non-cognates / abstract vs. concrete
Learning method

Which learning method leads to better word learning?

- picture-based method
- word-based method

window → Fahrrad → bicycle
Word status

Which word status leads to superior word retention?

cognates

Katze → cat

non-cognates

Gürsteltier → armadillo
Research with adults

Lotto & De Groot (1998):
tested learning method & word status in young adults (L1 Dutch–L2 English, learnt Italian words)

Results:

- word-based method more effective than picture-based method in these experienced L2 learners
- cognates easier to learn than non-cognates
Research with children

Tonzar et al. (2009): tested learning method & word status in 9 and 13 year-old children (L1 Italian, learnt German & English words)

Results:
- picture-based method more effective than word-based method in these inexperienced L2 learners
- cognates facilitated learning more for older kids

see Comesaña et al. (2009) for similar results
Why this discrepancy?

Is age the only relevant factor here?
What else has an influence?

Which other factors may influence word learning?

- concreteness
- valence (emotional content)
- time intervals between learning
- imitation vs. retrieval practice
- gestures
- learner types/learning styles
Concreteness and valence

**Concreteness** (concrete vs. abstract)
**Valence** (emotional content: positive, negative, neutral)

Ferré et al. (2015) found that:

- emotional content facilitated the acquisition of abstract, but not concrete words
- abstract neutral words are hardest to learn
Time intervals between learning to maximize long-term memory retention

Carpenter et al. (2012): Re-exposing students to previously learnt vocabulary in cumulative quizzes at intervals of several weeks facilitates retention.

Does the syllabus allow for this approach?
Imitation vs. retrieval practice

Kang et al. (2013): Retrieval practice more effective than imitation

(a) Imitation

- 4 seconds
- Show picture
- Play L2 word
- Learner repeats aloud L2 word

(b) Retrieval Practice

- 4 seconds
- Show picture
- 4 s – duration of L2 soundfile
- Play L2 word
- Learner tries to produce L2 word
Using gestures in vocabulary learning

Linking novel L2 words to pre-existing embodied L1 representations (in form of gestures) can assist in word recall and retention. (Macedonia, 2014)

Challenge: Finding gestures to fit…

- …action words (“to go”)
- …abstract, non-action words (“thought”)
- …function words (“already”)
Learning styles & learner types

Learner types (aural, visual, haptic…)

- No substantiating scientific evidence that catering to learner types facilitates vocabulary learning.

- “Impoverished linguistic input by allowing only one modality, for example only acoustic or visual input, reduces the chances of acquiring L2 words.“ (Macedonia, 2015, p. 1)

- “In fact, (...) inclusion of multiple modalities leads to best results.” (Macedonia, 2015, p. 1)
General limitations for research?

Do learners only learn nouns?

German words that may be difficult to translate:
- Fremdschämen, Schadenfreude, Fernweh

Do these words have shared conceptual representation for German-English bilinguals or for German L2 learners of English?

Do concepts thus always fully overlap across languages?
Revising the RHM some more…

Joint lexicon?

L1

L2

concepts

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Factors that facilitate learning L2 words:

- picture-method strengthens L2 word-to-concept link
- importance of context when learning abstract, neutral L2 words
- gestures to access pre-existing embodied cognition
Summary

Further factors that facilitate learning L2 words:

- cumulative revision at intervals of several weeks
- retrieval practice better than imitation

And...
- catering to learner types may be counterproductive
In teaching, placing less stress on translating L1 words into English via paired associate learning (which would strengthen L2 word to L1 word form connections) and more stress on the integration of L2 words into meaningful contexts, will foster the development of L2 word form-to-concept connections.

This is the long-term goal of L2 vocabulary acquisition anyway.
References


