Knowing More than One Language:
The Psycholinguistics of Bilingualism

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What does it mean to be ‘bilingual’?

Bilingualism
a variety of definitions:
- a person who is equally proficient in 2 languages
- a person with minimal competence in L2
- a person with a functional command of 2 languages (and whose linguistic competence is in a stable state)

Co-ordinate & Compound Bilinguals
(Weinreich, 1953; Ervin & Osgood, 1954)

Coordinate bilinguals:
have separate, language-specific meanings associated with L1 & L2
(2 sets of meaning + 2 linguistic systems)

Compound bilinguals:
have one meaning system for L1 & L2 (fused representations) but 2 different means of expression
(1 meaning set + 2 linguistic systems)

*Subordinate bilinguals:
low-proficiency: the weaker language is interpreted through the stronger language

Context of Acquisition may lead to differences in cognitive organization:

coordinate: L1 & L2 used separately in childhood
e.g., ‘Mommy/Daddy language’, home/school language etc.

compound: mixing L1 & L2, using them in the same environment/with the same person

Some things bilinguals commonly do:
- mix L1 & L2
- keep L1 & L2 separate
- translate
- in many cases, experience interference
Bilingual processing: the Switch Hypothesis (early proposal)

- a language switch (on/off): accounts for the bilingual’s ability to switch between L1 & L2 based on the situation (e.g., MacNamara & Kushnir, 1971)
- substantial evidence against such a switch: both languages can be activated at the same time
  e.g. chat pain coin (both meanings are activated)
  also, orthographic neighbours in both languages of a bilingual are activated during word recognition (Van Heuven et al., 1998):
  e.g. English target doom
       English neighbours: room, dorm, door
       Dutch neighbours: boom, drom, doos

More recent proposals:

- language-tagging: each word bears a ‘language tag’ (info about its language), e.g., ‘English’
- activation & control (Green, 1966, 1993, 1998)
  - a bilingual’s language systems may take on different levels of activation (selected/active/dormant)
  - a bilingual can suppress activation & output from one of the languages (i.e., items with particular language tags)

3 levels of language activation:

1) Selected: currently being spoken
2) Active: plays a role in ongoing processing (works parallel to ‘selected’)
3) Dormant: stored in long-term memory, no role in ongoing processing

Some techniques used to investigate bilingual representation and processing:

Bilingual version of the priming task: examines connections between words of L1 & L2
  e.g. apple (preceded by pomme)
  vs. apple (preceded by livre)
  (repetition priming: apple & pomme are translation equivalents)

livre
apple

pomme

carafe
Bilingual version of the priming task (cont.)

1) repetition priming: apple & pomme are translation equivalents.
   apple (preceded by pomme) vs. apple (preceded by livre)

2) semantic priming: peach & pomme are semantically related words
   e.g. peach (preceded by pomme)
   vs.
   peach (preceded by livre)
Bilingual Version of the Stroop Experimental Task

What happens on the monolingual task?

e.g., name the colour of the ink

loï

neep

* 

pomme

peach
**Stroop Task (cont.)**
name the colour of the ink:
e.g. red blue green (congruent)
red blue green (incongruent)
Stroop effect: interference from the word meaning in the incongruent condition, processor cannot be shut off

**Bilingual version of the Stroop task (cross-language colour naming):**
Can you shut off your other language?
name the colour of the ink:
e.g. rouge bleu vert (congruent)
rouge bleu vert (incongruent)
Stroop effect: same as with monolinguals, processor cannot be shut off

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**The Bilingual Lexicon: How are words of the 2 languages represented in the mind of bilinguals?**

1) **Two separate stores**
   - L1 & L2 words stored separately (in language-specific lexicons)

2) **One common store**
   - L1 & L2 words stored together (in a language-independent lexicon)

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**The Bilingual Lexicon: Common or Separate Storage?**

Perhaps common at one level of representation but separate at another?

Conceptual Store (language-independent) and Lexical Store (language-specific)

OK but how are the two linked?

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**The Bilingual Lexicon: Concept-Mediation or Word-Association?**
A later revision: A developmental shift from Word-Association to Concept-Mediation?

More recently: Distributed models of bilingual representation (recall connectionism?)
- each word is represented as a collection of interconnected nodes
- some nodes are shared across L1 & L2

So what do we learn from all this?
- there is probably one language system but individual languages show ‘reality’
- how languages are represented and processed depends on the characteristics of the bilingual as well as on the properties of linguistic units
- languages can be activated to varying extents depending on the linguistic context & nature of the task* (please see note below)

*note for this last point that I had meant to mention in class: the statement contained in it concerns, e.g., producing speech in L1 or L2 depending on the linguistic context/task demands: suppressing speech output from a particular language based on the situation. However, as far as, e.g., word recognition is concerned, there has been much debate about the degree to which a bilingual can exercise control over the activation of words from L1 or L2. There seems to be a substantial body of evidence that bilingual lexical access is non-selective and automatic in nature (for instance, even in tasks that are monolingual in nature, i.e., those that do not require explicitly the use of both L1 & L2, words from both languages are activated in bilinguals).