Some evidence

How do people generate words? Some evidence. . .

Picture-naming task (Oldfield&Wingfield’65):

- stimuli: picture to be named: chair
- measure: time to (correctly) name picture: → ‘chair’
- results:
  - frequency effect: more frequent phon. words were quicker
  - frequency inheritance: effect holds for freq. words from other sense

Picture-word interference task (Dell&al’97,...):

- stimuli: picture to be named and distractor word: chair, ‘table’
- measure: time to (correctly) name picture: → ‘chair’
- results:
  - semantically similar distractors inhibit (slow) response: chair, ‘table’
  - phonetically similar distractors facilitate (speed) response: chair, ‘pear’
  - picture classification (→ ‘furniture’): semantic similarity facilitates
Some evidence

Picture-word interference task (Dell & al’97,...):
  ▶ picture-word interference with time pressure
  ▶ results:
    ▶ word, phone errors
    ▶ more common phone errors that result in words

Other evidence:
  ▶ TOT: anomic subjects could identify gender w/o word (Italian)
  ▶ gender congruency effect (Dutch; sim to picture-word inference)
  ▶ lateralized readiness potentials (Dutch):
    if /b/, press left (right) on fem (not fem) → prep on no-go
    if fem, press left (right) on /b/ (not /b/) → no prep on no-go

Seems to point to gender being more quickly accessible than phon. word
Language Production

WEAVER++ (Levelt & al’99) model of language production errors:

1. **conceptual preparation** → **concept**
   given previous concept(s), prev. lemma(s), traversing event participants

2. **lexical selection** → **lemma** (*Escort*): a classification for concepts
given concept, facil. by recent use of word (evid. from lexical priming)

3. (syn. prediction) → expected category, incl. diacritic feats (*VP-prog*)
given previous expected category, previous lemma

4. **morphological encoding** → **morphemes** (*escort -ing*)
given lemma (*Escort*), expected cat (*VP-prog*), prev. morpheme (*escort*)

5. **phonological encoding / syllabification** → **phon. word** (/ə 'skər tǐŋ/)
given morphemes (*escort -ing*), prev. words (/ˈbi/ ) – may be swapped
   ▶ phon. words made of **syllables**, indexed by position (may be swapped)
   ▶ syllables made of **phonemes**, indexed by position (may be swapped)

6. **phonetic encoding** → **phonetic gestural score** (voice/tongue/lips)
given syllable (/ɪŋ/), previous voice/tongue/lip state, ...

7. **articulation** → **sound wave** (end of model)
An explanation

WEAVER++ explains...

- semantic interference effects in picture-word interference paradigm
  - train model on picture-word data, approximate results on test data
- findings on tip-of-the-tongue states
- gender congruency effects in computing agreement
- specific frequency effects in accessing gender information
- ERP in accessing lexical properties of picture names
- word exchange errors: ‘how many pies to make an apple?’
- morpheme exchange errors: ‘slicely thinned’
- syllable exchange errors: ‘moran and fader’ → ‘morer and fadan’?
- phoneme exchange errors: ‘mell wade’, ‘bud begs’, ‘god to seen’?
- feature exchange errors: ‘big and fat’ → ‘pig and vat’
Dell model:

- common to make ‘mixed’ phoneme errors that are also word errors:
  E.g. cat → ‘rat’
- feedback from phonemes increases activation of wrong word

Levelt&al respond:

- no reaction time evidence for this proposed feedback mechanism
- alternative explanations for mixed errors using self-monitoring

Caramazza’97: different words for speaking and writing?

- speaking: cook → ‘dish’
- writing: cook → ‘fork’
For next time...

Read:
- Traxler ch 2, pp. 54–70