

## Speech Production

Whereas psychologists have a considerable body of research on comprehension processes, how sentences are produced is less well understood.

- Most of the process goes on outside of conscious awareness, making it hard to pin down what is happening and when.

## Questions

- How do we conceptualize what we are going to say?
- How do we find the “right” words to express our conceptualizations?
- What are the “units” or building blocks of speech production?
- What are the “stages” of assembling speech units?
- What kind of errors do people make while speaking, and what do the errors tell us about speech production?
- What factors affect speech production, such as speaking rate and pausing?
- How are gestures and emotions integrated in the speech stream?
- What models have been proposed to account for the data?

## The production process

4 major stages of speech production:

- conceptualizing a thought
- formulating a linguistic plan
- implementing the plan
- self-monitoring for errors

## Finding Words

- Picture naming
- The tip-of-the-tongue (TOT) phenomenon.
  - Brown and McNeil 1966 : “a flat-bottomed boat used in Asia” (sampo, sarong, cheyenne, shang pan — instead of ‘sampan’).

## Implementing the Plan

- pauses:
  - We pause to produce an “idealized” representation of a sentence, especially when we are reading.
  - Speakers pause to control their speech rates, not talking too fast or too slowly.
  - Most pausing occurs before content words rather than before function words.
  - Most pausing occurs at a grammatical boundary
  - filled pauses : um, er, ah, well, say, I mean, you know...

## Slips of the Tongue

Major types of slips of the tongue:

- Shift: the speech unit moves to a different location *That's so she'll be ready in case she decide to hits it* (decides to hit it);  
*get its* (gets it);
- Exchange: two units swap positions  
*Fancy getting your model renosed* (getting your nose remodeled);  
*writing a mother to my letter* (writing a letter to my mother);  
*slicely thinned* (thinly sliced);
- Anticipation : a speech unit is activated too early  
*Bake my bike* (take my bike);  
*leading list* (reading list)  
*sky is in the sky* (sun is in the sky);

- Perseveration : a speech unit is activated too late  
*He pulled a pantrum* (tantrum);  
*beef needle* (beef noodle);
- Addition : a unit is added  
*I didn't explain this clarefully enough* (carefully enough);  
*to strained it* (to strain it);
- Deletion : a unit is deleted *same sate* (same state);  
*I'll just get up and mutter intelligibly* (unintelligibly);
- Substitution : a unit is changed into a different unit.  
*At low speeds it's too light* (heavy);
- Blend : two speech units are combined  
*That child is looking to be spaddled* (spanked/paddled).
- Misdeviation: the wrong unit is attached to a word  
*intervening node* → *intervenient node*

## How to view speech errors

- unintended consequences of the productivity of language; i.e. slips as misapplication of the generative rules for combining one type of unit or another;
- Slips demonstrate that an utterance is planned before it is spoken. During the production of a particular phrase, many different units and concepts may be available for production. Consequently, various units may “compete” to be produced. (e.g. anticipation errors).

## Accommodation

*It certainly run outs fast* (runs out)

- Accommodation processes support the notion that the phonetic representation of the sentence is formulated after the level at which the error occurs (formation of affixes in this case).

- ball doze  
bash door  
bean deck  
bell dark  
darn bore  
RESPOND
- big dutch  
bang doll  
bill deal  
bark dog  
dart board  
RESPOND

lexical bias effect

During speech we develop more than a single speech plan and that when this occurs the two plans may compete for production.

## Laboratory-induced speech errors

Phonological bias technique

- Participants are given a list of word pairs to read silently; but occasionally they receive a cue that they must read one pair aloud.
- It is possible to induce errors by varying the nature of the word pairs that precede the pair to be read aloud (the target pair).

## Conclusions about speech errors

The order of emergence of speech errors shows that planning occurs first with semantic information and sentence framing, then moves into lexical and morphological stages, which are followed finally by phonological information.

- Elements that interact come from similar environments
- Elements that interact tend to be similar: consonants with consonants and vowels with vowels.
- Slips that created novel words generally obey the phonological rules of language.
- Stress patterns in production are consistent. Swapped segments usually come from stressed components of words or phrases or from components that are marked for minor stress features.

## Production Monitoring and Editing

Levelt (1983) proposed that self-repairs occur at both the covert and overt levels.

- Phonological  
*They have a [nalš] \*\* nice boat.*
- Morphological  
*So the man have \*\* has got his hats back.*
- Lexical  
*If you must read \*\* uh write the English word...*
- Syntactic  
*It's not you do \*\* something you do every day.*
- Inappropriate with replacement  
*It turns out to be a film \*\* a movie scene...*
- Inappropriate with insertion  
*You see a policeman \*\* an English policeman...*

## More on self-repairs

Come in three types:

- Instant repairs: the speaker traces back to the mistake, which is then replaced.  
*the blank corssing point \*\* white crossing point.*
- Anticipatory repairs: the speaker returns to a point in the sentence BEFORE the error  
*to the purple crossing point \*\* to the red crossing point*
- Fresh Starts: the speakers abandons the original sentence and starts over  
*from yellow down to brown \*\* no, that's red.*