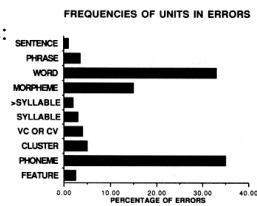


Overview - slips of the tongue

- Types (in book, p. 312-318)
- Why do they happen
- What do they tell us (p. 314-327)
 - Factors important in organization
 - Assembly vs. storage
 - Process of creating a sentence
- Models based on these results (p. 327-338)
 - Lexical bias and its implications for models
- Slips of the hand
- Self-monitoring

Slips of the tongue

- Errors can occur between entire words or morphemes, single phonemes, or single features.
- Phonological errors:
 - Anticipations
 - Perseverations
 - Exchanges



Source: http://www.ling.upenn.edu/courses/Fall_2000/ling001/exchange.gif

Anticipations

- a later segment intrudes on an earlier one
 - *Bake my bike.* (instead of take my bike)
 - *The current month is...*
 - *He disses the dog.*
 - *Leading list.* (for reading list)
 - *If you can change the first part...*

Speech errors on this, and subsequent pages, from: Newman (unpub.), Fromkin, V., Garrett, M., & the UCLA Speech error corpus, and from www.ling.upenn.edu/courses/Fall_2000/ling001/production_perception.htm

Perseverations

- an earlier segment replaces a later one.
 - *I dreamt he droke both his arms*
 - *brushin' his teesh*
 - *Sloan Kettering in New York Citery*
 - *a phonological fool* (intended: rule)
 - *He pulled a pantrum*

Exchanges

- two sounds swap places
 - *nife lite*
 - *sibbalus* (syllabus)
 - *burst of beaden*
 - *Not by the chair of my hinny-hin-hin!*
 - *....sissle theeds...* (thistle seeds)
 - *hold card cash*
 - *...by the sery vame...*
 - *coppee and caffucino*
 - *Did the grass clack?* (glass crack)
 - *I have a stick neff* (stiff neck)
 - *lack of ram* (rack of lamb)
 - *Some bray my dain will think before I talk.*

Restrictions

- Parts of words affected
- Types of sounds
- Similar stress

Blends

- when you combine two words
 - *He hung it on the ward* (“wall” and “board”)
 - *Stimulate . . .* (“generate stimuli”)
 - *little sneaker* (“sneak” and “stinker”)
 - *I’m soooo store* (“stiff” and “sore”)
 - *the brakes made a terrible screeching sounds* (“screeching” and “squealing”)

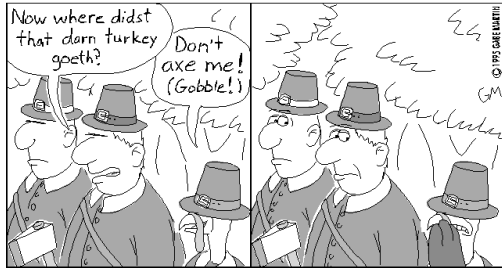
One problem - classification

- I won’t ask any flavors [favors]
 - phoneme addition or lexical substitution?
- I’m always very amused [amazed]
 - phoneme substitution (/ju/ for /e/) or lexical substitution?
- Why is natural glass... [gas]
 - phoneme addition, or perseveration from /l/ in “natural”?
- Keep Tar -- Car Talk on the air
 - an anticipation of /t/ or a word substitution?
- Fromkin argues for phonological feature errors:
 - Bruuk (group) - [labial] and [velar] exchanged
 - Pig and vat (big and fat) - voicing exchange
 - Shattuck-Hufnagel has argued that these are exceptionally rare, and that most cases can be considered other types of errors.

Why do speech errors happen?

- Freud suggested that speech errors were a sign that the speaker has more than one thing in mind at a time, and that the error is an indication of repressed fears or desires.
 - George Bush, Newsweek (1992) – *I don’t want to run the risk of ruining what is a lovely recession* (reception)
 - *Last night my grandmother lied* (died)

Why do speech errors happen?



Turkey Freudian Slips

Source: http://www.ling.upenn.edu/courses/Fall_2000/ling001/exchange.gif

Why do speech errors happen?

- These types of errors are atypical.
- Speech errors occur simply because talking is a cognitively complex and difficult task, with many opportunities for mix-ups in memory and execution.

What slips tell us

- Target and substituted words tend to share:
 - initial segments
 - stress pattern
 - morphological structure
 - phonological form
 - semantic properties
 - you have too many irons in the fire → in the smoke
 - arrested and prosecuted → arrested and persecuted
- Suggests all of these factors are important parts of lexical organization

What slips tell us

- Assembly vs. storage of morphologically complex words
 - *I'll just get up and mutter intelligibly* (unintelligibly)
 - *easy enoughly* (easily enough)

Strands

- Two content words exchanged, but the function morphemes got left behind.
 - I'm not in the read for mooding.
 - She's already trunked two packs.
 - Fancy getting your model renosed.
 - I want to get a cash checked.

Opposite type of error

- The function morpheme moves (or shifts), leaving the content word behind.
 - *If you can't figure what that out is...* (figure out)
 - *That would be the same as add tenning.* (adding ten)
 - *Did you put it in the fridge back?*

Strands & shifts, cont.

– *I'd hear it if I knew it.* (I'd know it if I heard it).

- We create a sentence frame, using more abstract notions of these function morphemes, and only later “convert” them into their surface form.
 - *an language lacquisition device* (a language acquisition device)
 - *even the best team losts* (even the best teams lost)
- The surface output changes to match the surrounding context: accommodation.

Models of speech production

- We produce utterances by a series of stages, each devoted to a different level of linguistic analysis.
 - Speech errors can tell us what these different stages of processing look like.

Fromkin's model of speech production

- Identification or generation of meaning
 - Selection of a syntactic structure
 - Generation of an intonation contour
 - Insertion of content words
 - Formation of affixes and function words
 - Specification of phonetic segments
-
- Ex: Garrett (1975): *She's already trunked two packs*

Examples, cont.

- Stop beating your brick against a head wall.
- *sickle and HAMMER* (hammer and SICKLE)
 - Primary stress remained as original - demonstrating stress is before content word
- It certainly run outs fast (runs out)
 - Change in plural realization (/s/ after out, but /z/ after run)
 - Phonetic representation of the sentence (stage 6) occurs after the error (stage 5) – the morpheme at stage 5 are abstract entities, with the precise phonetic specification depending on where they end up.
- *Singing sewer machine* (singer sewing machine)
 - Error is at stage 5, as the suffixes are exchanged, but the rest of the sentence is left alone.

Independence

- Fromkin's approach suggests that each stage of processing is independent from every other stage.
- Problem: Do phonological errors end up being real words more often than chance?

Evidence for a lexical bias?

- Different corpora lead to different conclusions.
 - Gary Dell has argued that his corpus of natural speech errors has a lexical bias
 - Merrill Garrett argued that his did not.
- So, people then turned to laboratory-induced errors.

Laboratory-induced errors

- by Motley & Baars
 - Subjects read a list of word pairs such as "dart board."
 - Target pairs: pairs in which the experimenter hopes to induce an error.
 - "Bias pairs": have something in common with desired error.
 - Three bias pairs precede every target pair.
- Example:
 - dart board (bias pair)
 - dust bin (bias pair)
 - duck bill (bias pair)
 - barn door (target pair: --> darn bore?)
- Subjects produce about 10-15% errors.

Laboratory-induced errors, cont.

- | | |
|--|---|
| • Lexical condition (errors produce words) | • Nonlexical condition (errors produce nonwords): |
| - bean deck | - big dutch |
| - ball doze | - bang doll |
| - bash door | - bill deal |
| - bean deck | - bark dog |
| - bell dark | - dart board |
| - darn bore | |
- RESULT "barn door" 30% of the time
 - RESULT "bart doard" 10% of the time

Subjects are more likely to make errors creating real words.

Why does lexical bias occur?

- Covert self-monitoring
- Top-down processing

Some clinical groups are not good at self-monitoring...

Types of words that are involved in errors

- Frequency effects
- Phonological similarity
- Neighborhoods

Slips of the hand

- Newkirk, Klima, Pederson & Bellugi collected a corpus of 131 errors in ASL, and found errors analogous to exchanges, anticipations and perseverations.

Slips of the hand

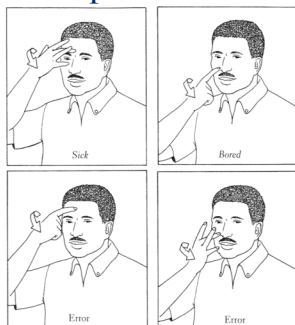
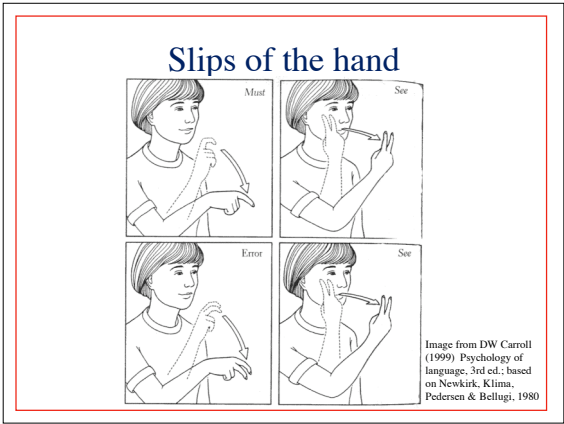
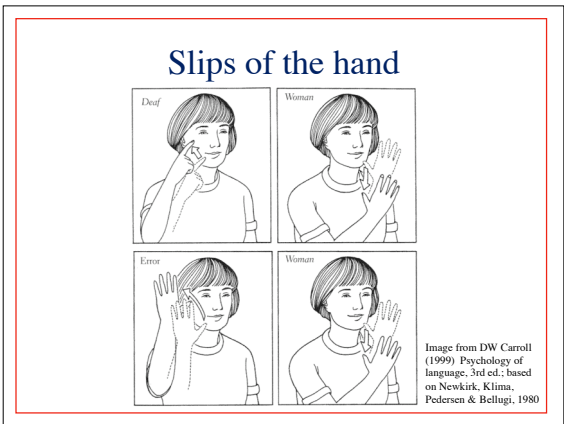


Image from DW Carroll (1999) Psychology of language, 3rd ed.; based on Newkirk, Klima, Pedersen & Bellugi, 1980



Slips of the hand

- Some slips involved just single features
 - hand configuration only, place only, or movement only, suggesting these are saeparate parameters
- Likewise, sign errors result in possible signs: accommodation.



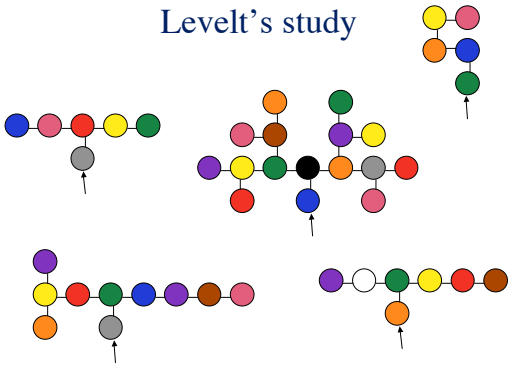
Overt self-monitoring

- Self-repairs
- Three parts:
 - Interruption
 - Editing expressions (*uh, sorry, I mean, etc.*).
 - Repair

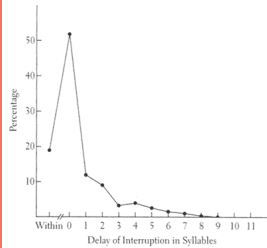
Self-interruptions

- Nooteboom
 - The timing of self-interruptions are based on two competing forces:
 - 1. We have an urge to correct the error immediately
 - 2. We want to complete the word we are speaking
- So most interruptions are made at the first word boundary after the error.

Levelt's study



Distribution of interruptions



- 18% were within a word
 - “We can go straight on to the ye-, to the orange node.”
- 51% were immediately after the error word
 - “Straight on to green – to red”
- The rest were delayed by one or more words
 - “And from green left to pink – er, from blue left to pink”

Image from DW Carroll (1999) *Psychology of language*, 3rd ed.

Editing expressions

- Different editing expressions indicate different types of errors.
- James (1972) found that people used “uh” and “oh” differently.
 - I saw... uh... 12 people at the party
 - “I saw... oh... 12 people at the party
- That is
- Rather
- I mean

Types of self-repairs

- Instant repairs
 - “Again left to the same blank crossing point -- white crossing point”
- Anticipatory retracing
 - “And left to the purple crossing point – to the red crossing point”
- Fresh starts
 - “From yellow down to brown – no -- that’s red.”
- Levelt: These are systematically different for true errors as compared to inappropriate statements.
