10 - Sentence Production Models

Nick Riches

Newcastle University

December 10, 2019

10 - Sentence Production Models

Nick Riches

5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

Five-minute exercise

Models of sentence production

1. Message level
2. Functional level
3. Positional level
4. Phonetic level

Bibliography

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

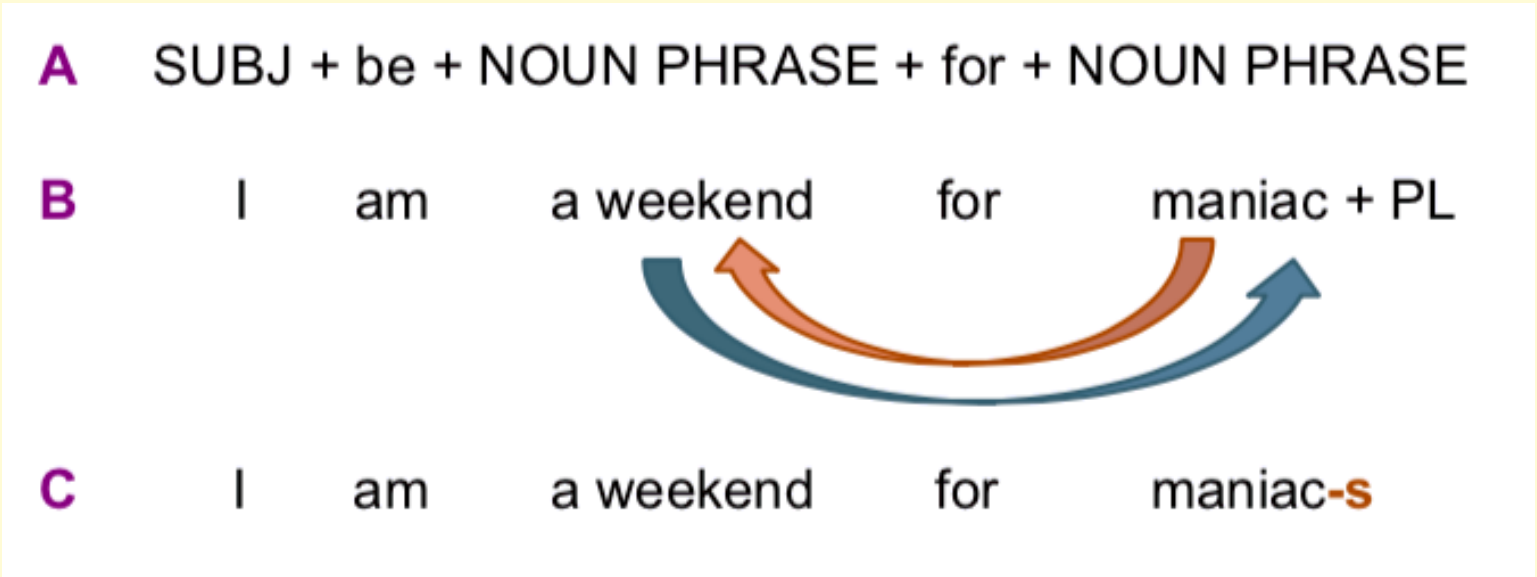
5 min ex.

Look at the following speech errors. What does this say about the integration between (a) planning the structure of the sentence, and (b) inserting words in sentences, and (c) producing phonemes.

1. I'm a weekend for maniacs.

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

5 min ex.



5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Five-minute exercise

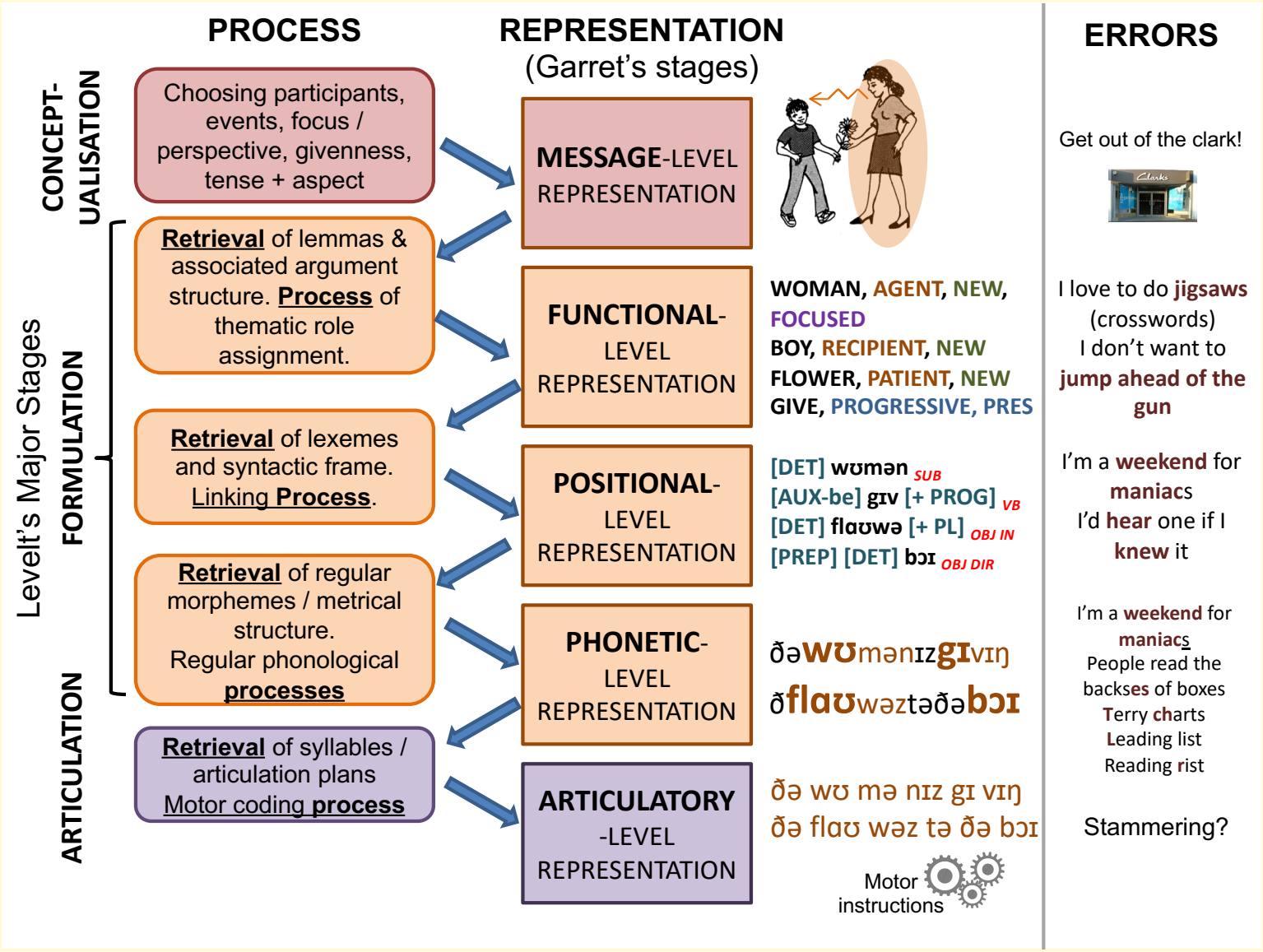
Models of sentence production

1. Message level
2. Functional level
3. Positional level
4. Phonetic level

Bibliography

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

The model



5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Garrett's model

1. **Message level** - Very abstract representation of what we are going to say
2. **Functional level** - Activations of relevant lemmas. Still no syntactic frame
3. **Positional level** - Syntactic frame chosen, insertion of invariant lexemes/morphemes
4. **Phonetic level** - Insertion of variant lexemes/morphemes and syllabification
5. **Articulatory level** - Speech motor programme assembled.

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Levelt's model

1. **Conceptual level** (corresponding to Garrett's message level)
2. **Formulation level** (corresponding to Garrett's Function, Positional, and Phonetic levels)
3. **Articulation level** (corresponding to Garrett's Articulatory level)

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Five-minute exercise

Models of sentence production

1. Message level

2. Functional level

3. Positional level

4. Phonetic level

Bibliography

5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

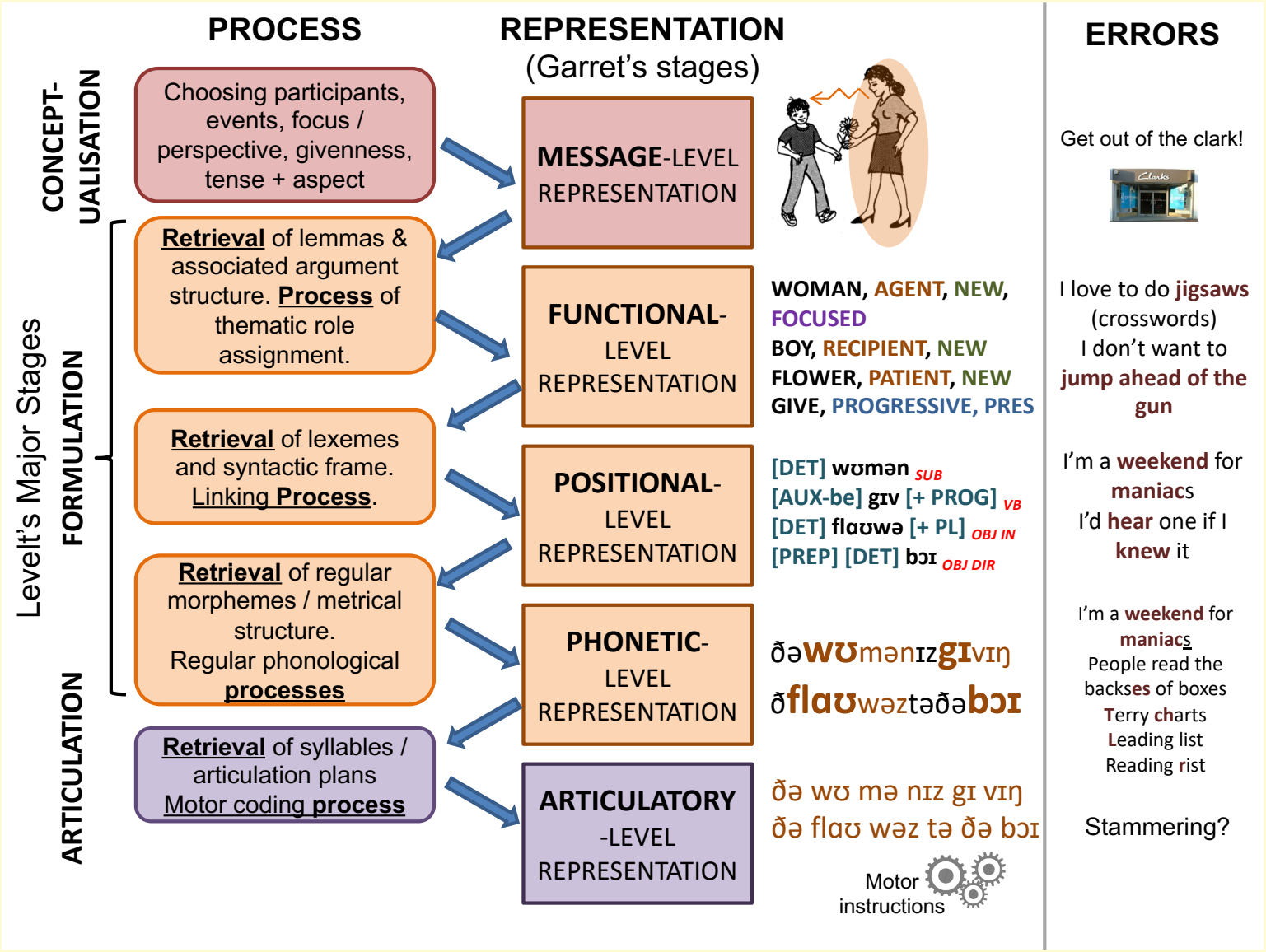
4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

1a. What information is represented at the message level?



5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

1a. What information is represented at the message level?

Entities we wish to talk about, and what kind of **situation** or **event** they are participating in.

Relational information, e.g. what is the relationship between an entity and an action? Is that entity the AGENT of the action, or the PATIENT of the action?

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

1a. What information is represented at the message level?

We take a particular **perspective** on the action.

We decide which entity to **focus** on.

Focused element expressed using full Noun Phrase (not pronoun), and placed sentence finally.

1. I saw a strange man in the street. [He *TOPIC*] was wearing [the weirdest clothes I've ever seen *FOCUS*].

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

1a. What information is represented at the message level?

Focus on the verb

Tense

Are we inside or outside of the event? (**grammatical aspect**)

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

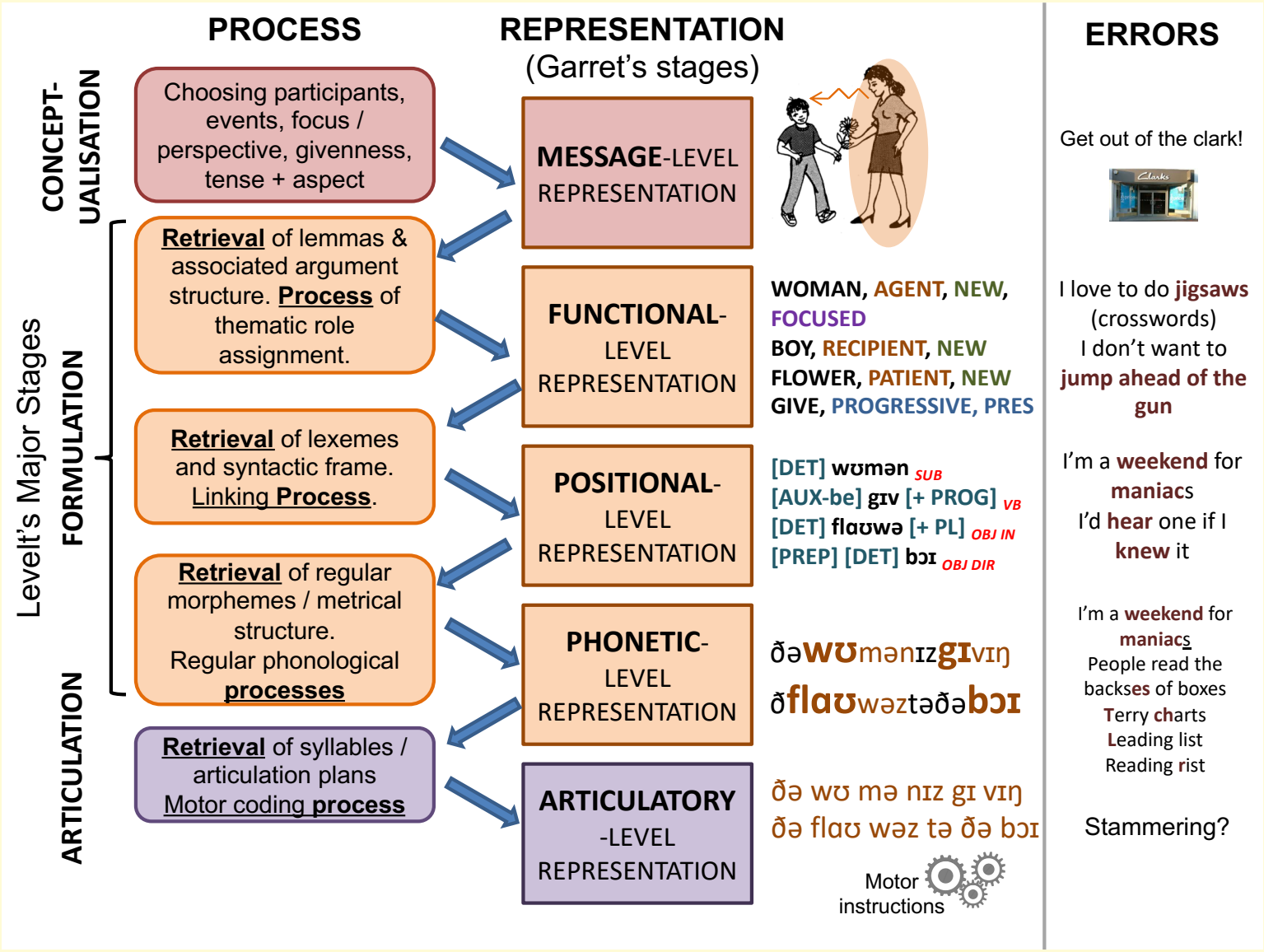
1a. What information is represented at the message level?

1. John has chopped the carrot PERFECTIVE aspect for completed event
2. John is chopping the carrot PROGRESSIVE aspect for ongoing event

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

1b. How do we get from the Message level to the Functional level?

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography



1b. How do we get from the Message level to the Functional level?

We **retrieve** (a) the lemmas (b) the argument structure

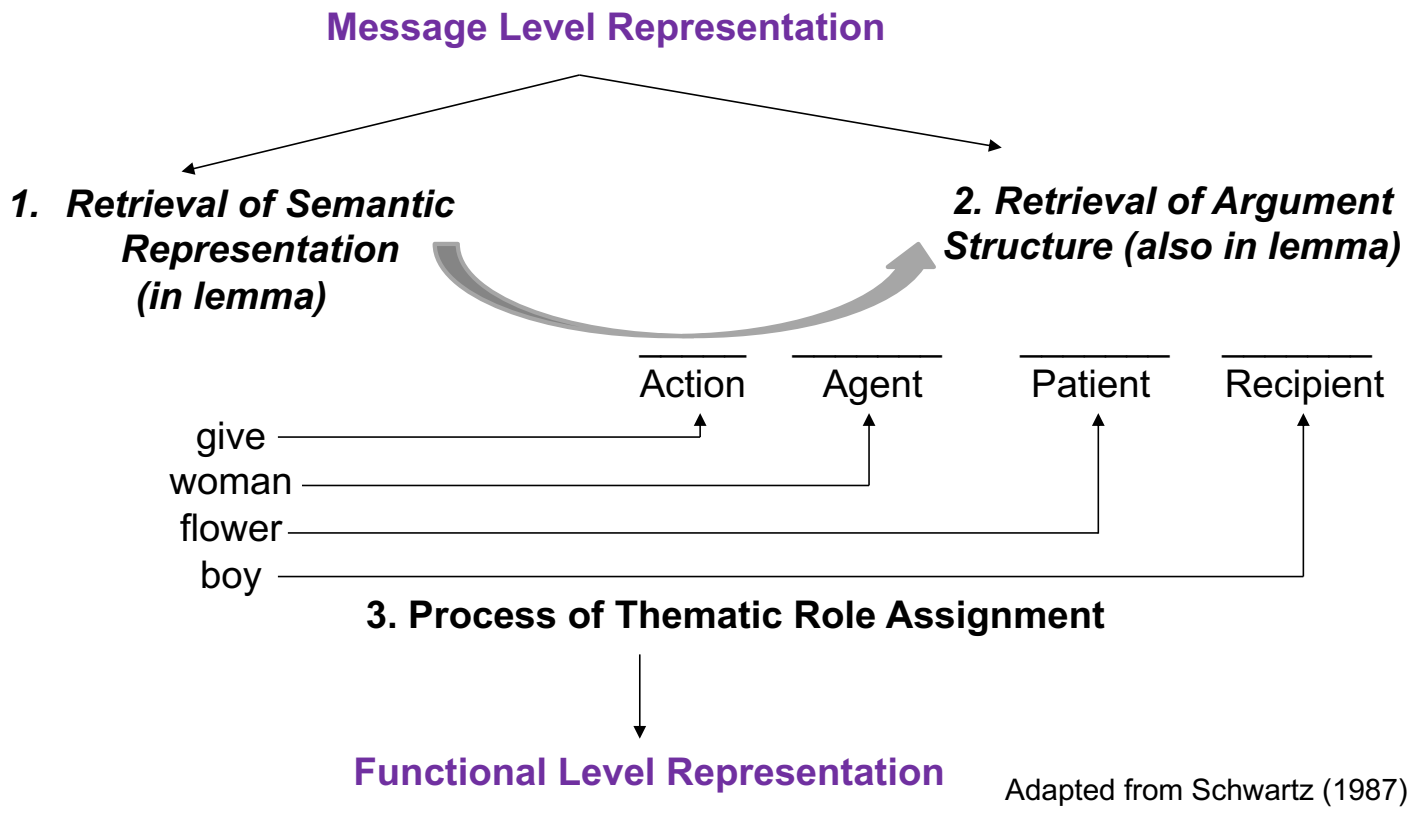
We assign thematic thematic relations

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

1b. How do we get from the Message level to the Functional level?

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

"The woman is giving the flower to the boy"



Adapted from Schwartz (1987)

Five-minute exercise

Models of sentence production

1. Message level

2. Functional level

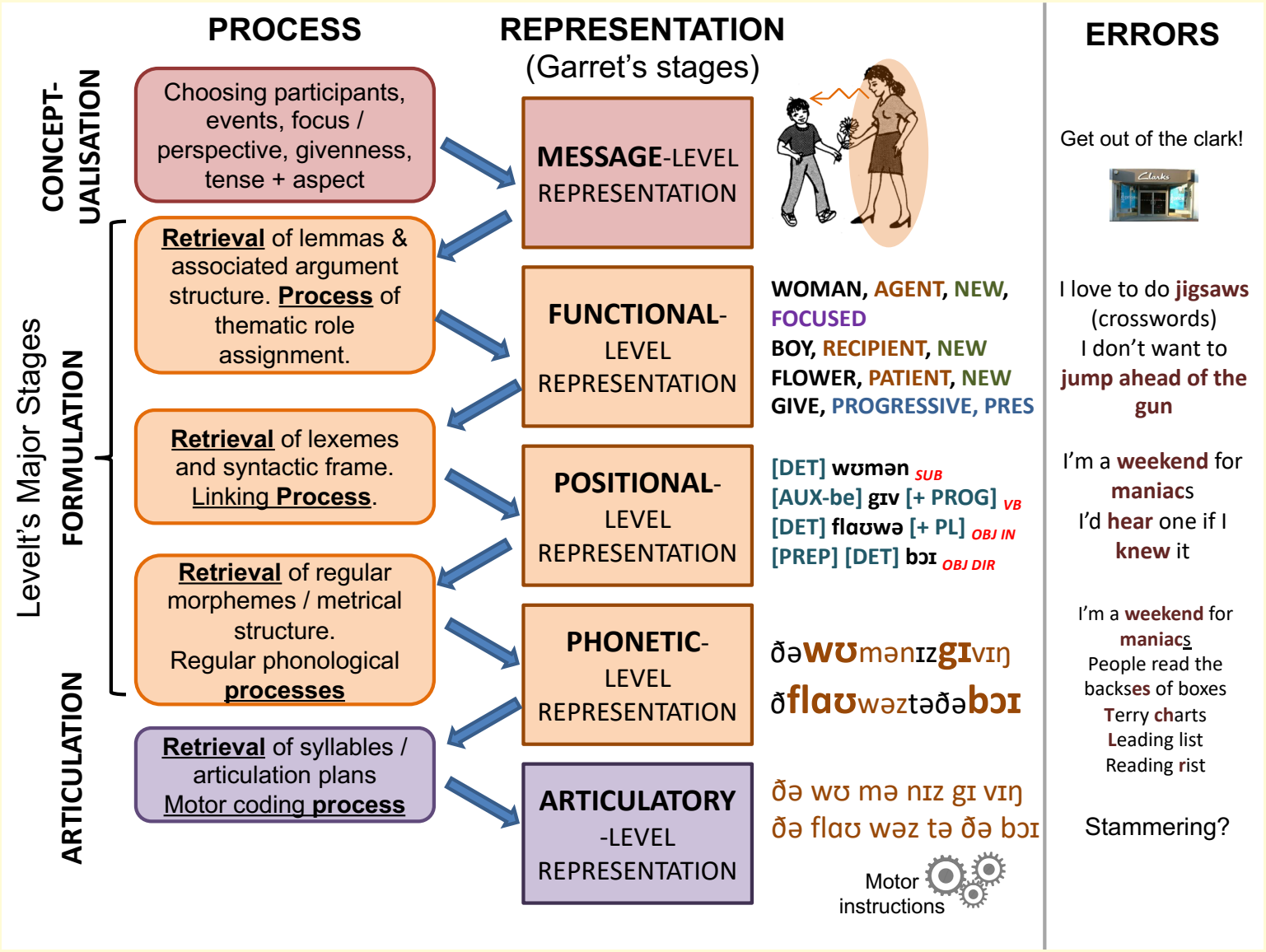
3. Positional level

4. Phonetic level

Bibliography

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

2a. What information is represented at the functional level?



5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

2a. What information is represented at the functional level?

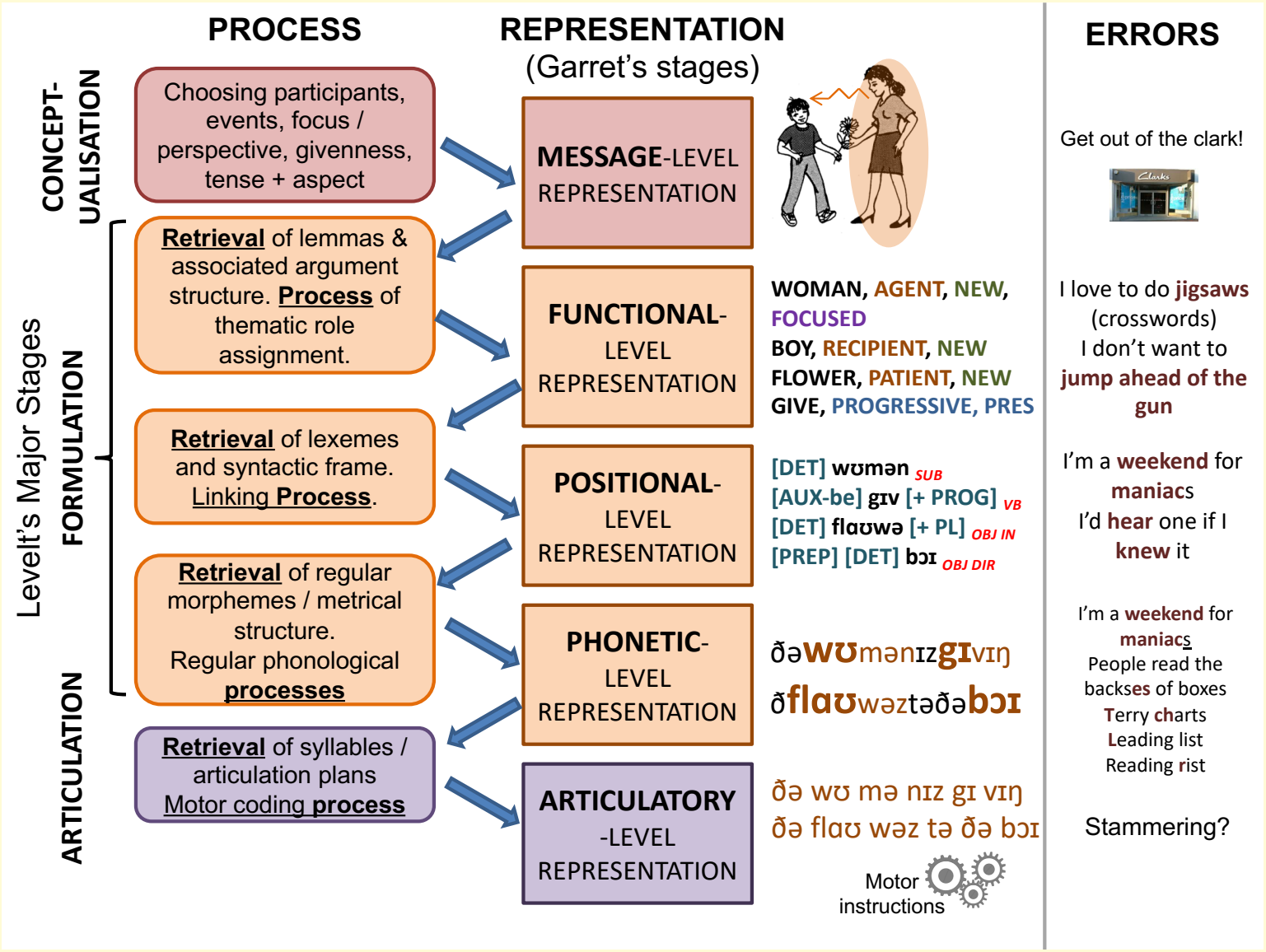
Semantic information: arguments with correct roles

Focusing information

No syntactic information

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

2b. How do we get from the Functional level to the Positional level?



10 - Sentence Production Models

Nick Riches

5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

2b. How do we get from the Functional level to the Positional level?

We **retrieve** (a) the lexemes (b) the syntactic frame

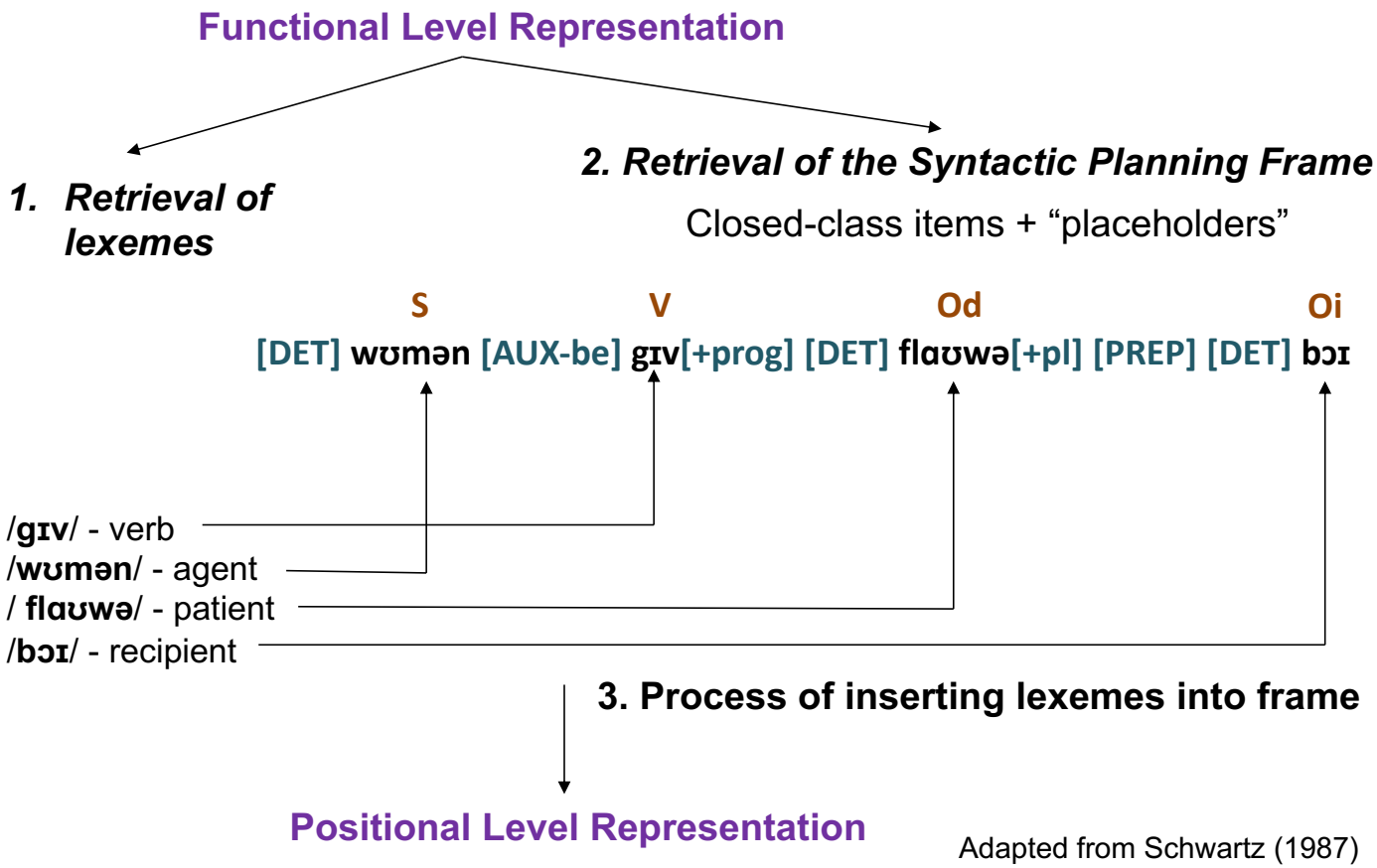
We **link** or **map** the arguments to their correct position in the frame.

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

2b. How do we get from the Functional level to the Positional level?

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

"The woman is giving the flower to the boy"



Adapted from Schwartz (1987)

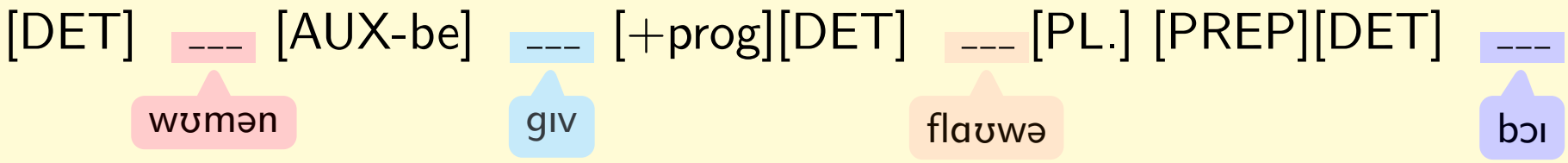
2b. How do we get from the Functional level to the Positional level?

The syntactic planning frame consists of (a) closed class morphemes (not yet phonetically substantiated), and (b) slots/placeholders for open class morphemes, e.g.

1. [DET] ___ [AUX-be] ___ [+prog][DET] ___ [PREP][DET] ___ (**dative**, e.g. *the woman is giving the flowers to the boy*)
2. [DET] ___ [AUX-be] ___ [+perf][PREP][DET] ___ **(passive**, e.g. *the cat was chased by the dog*)
3. [DET] ___[+past][DET]___. [PREP][DET]___. (**locative**, e.g. *the dog chased the cat up the tree*)

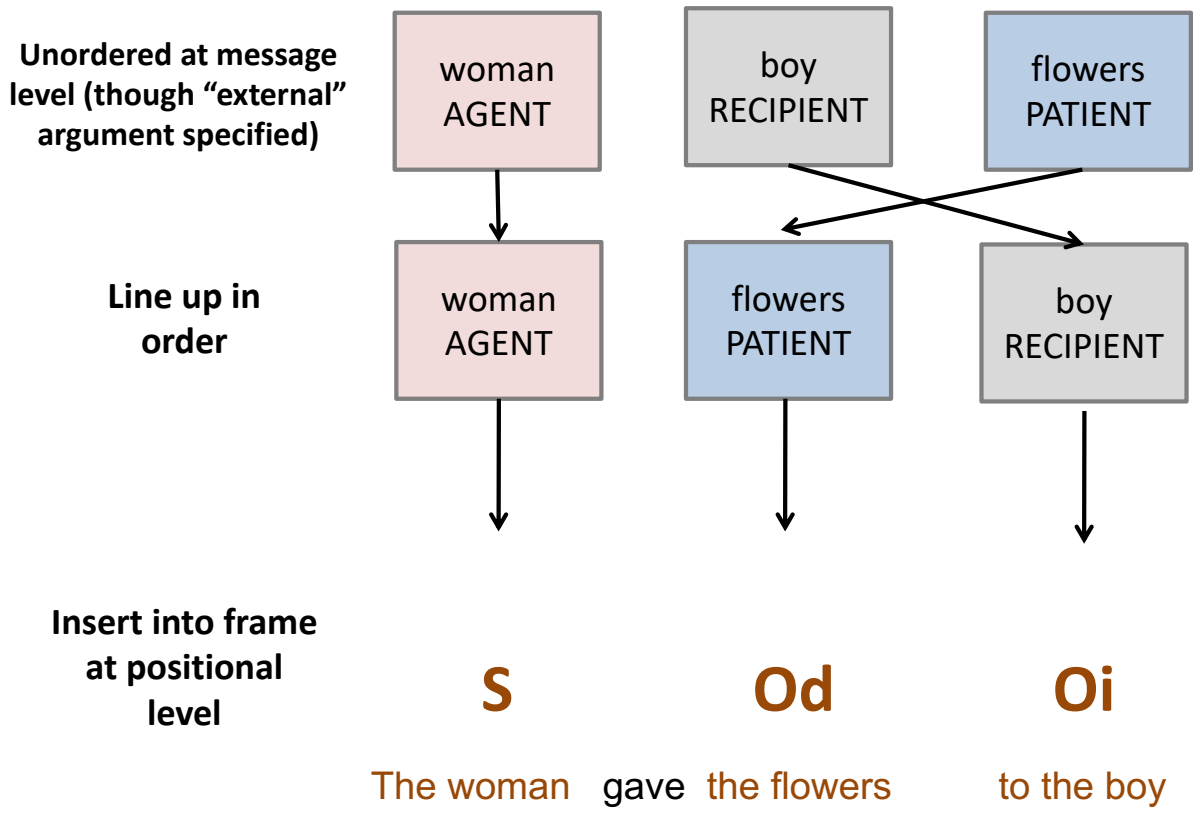
5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

2b. How do we get from the Functional level to the Positional level?



The linking problem

Jackendoff, 1990



5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

The linking problem

But note this won't always give the right results, e.g.

1. The man$_{AG.}$ **gave** the woman$_{REC.}$ the present$_{PAT.}$

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Errors in children

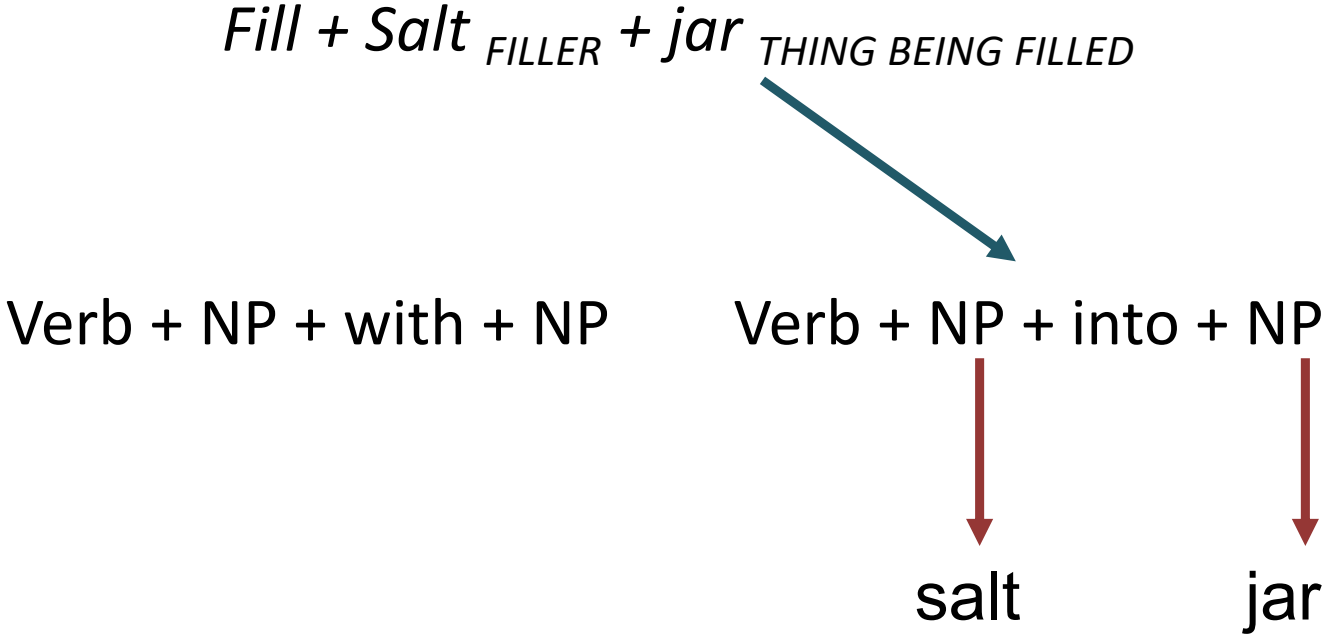
Have a look at these errors in children. How have they arisen?

1. Can I fill some salt into the bear?
2. I'm going to cover a screen over me. (Bowerman, 1982)
3. The lady is filling the sweets into the jar.
4. The lady is covering the scarf on her head. (Ebbels, 2007)

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Errors in children

Why are these errors happening?



Mis-selection of frame at positional level, but correct linking of arguments **for that frame**

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Five-minute exercise

Models of sentence production

1. Message level

2. Functional level

3. Positional level

4. Phonetic level

Bibliography

5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

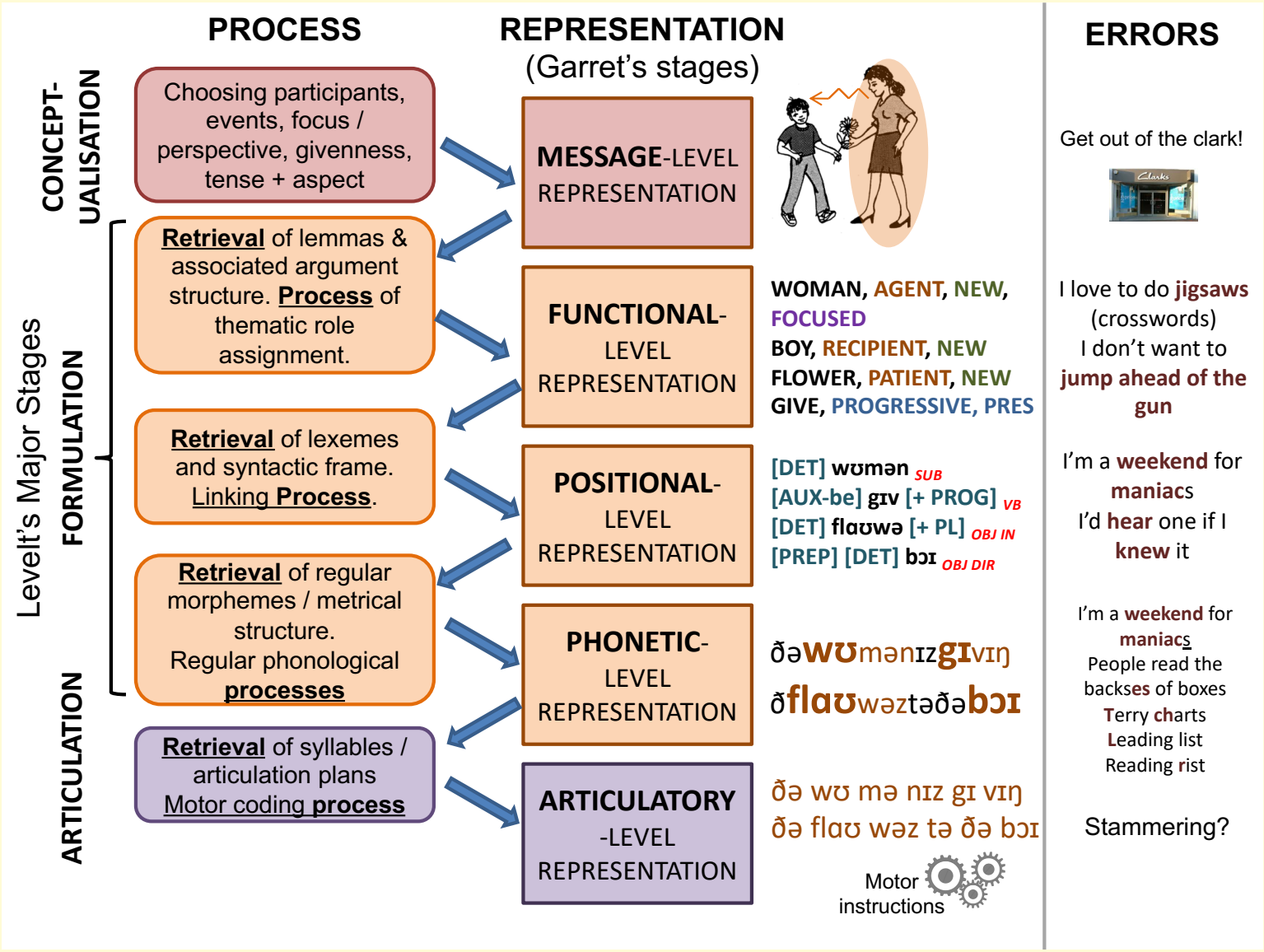
4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

3a. What information is represented at the Positional level?



5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

3a. What information is represented at the Positional level?

Now we have syntactic information!

We represent the **sentence frame**, and **lexemes which are phonetically invariant** (i.e. their pronunciation is similar whatever phonological context they occur in)

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

3a. What information is represented at the Positional level?

NB

(1) I'd know one if I heard it ⇒

(2) I'd hear one if I knew it

Verb form is conditioned by syntactic context

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

3b. How do we get from the Positional level to the Phonetic level?

We **retreive** (a) segments, and (b) metrical structure

We assemble a phonological sequence (consisting of segments, combined with metrical structure).

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

3b. How do we get from the Positional level to the Phonetic level?

Positional to Phonetic level

"Phonological assembly"

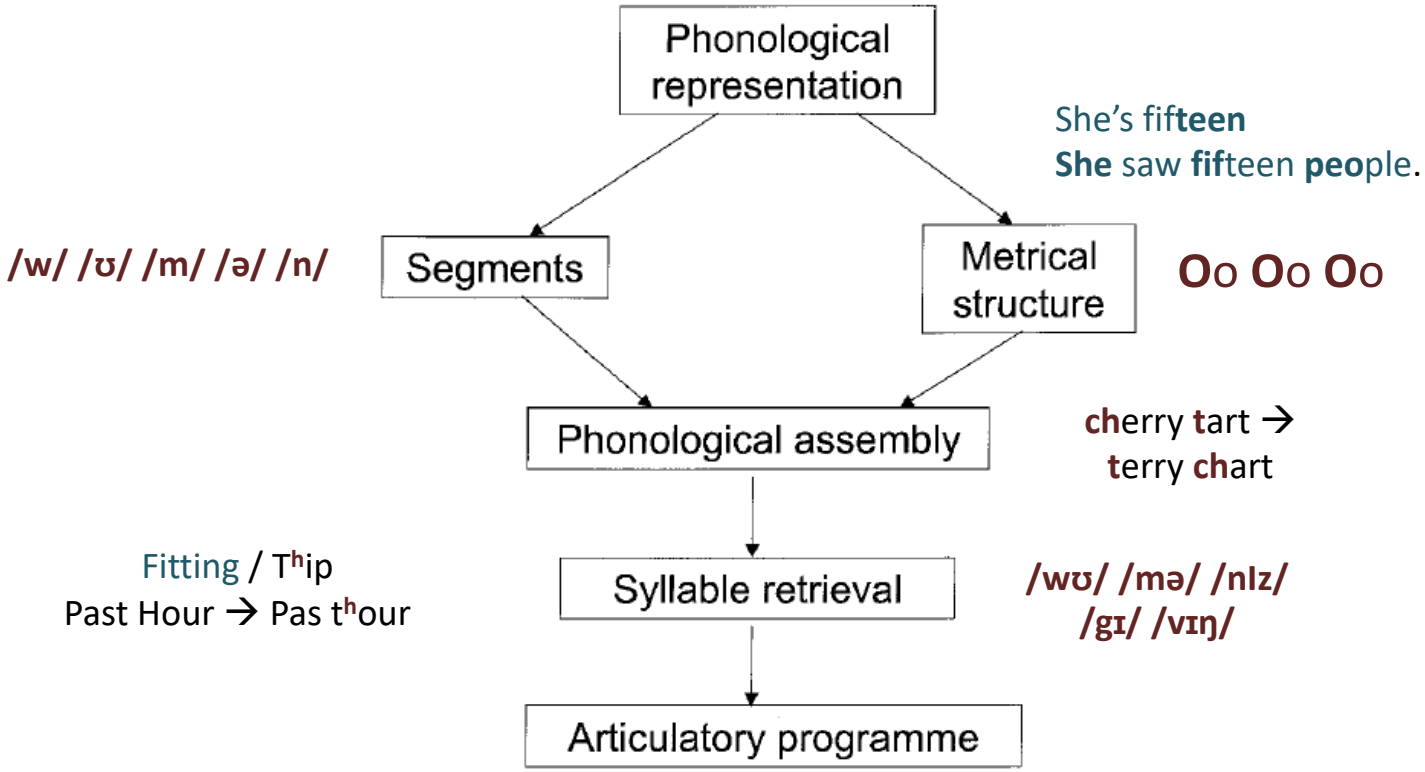


Figure 3. Levelt et al.'s (1999) model of speech production.

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

3b. How do we get from the Positional level to the Phonetic level?

Evidence that segments and metrical structure are stored separately:

1. Stress shift
   - 1.1 She's fif-**teen** / I saw **fif**-teen **men**.
   - 1.2 Five o'**clock** in the after-**noon** / We had **after**-noon **tea**.
   - 1.3 It was ca-ta-**stroph**-ic / It was a **ca**-ta-strophic **fai**lure
2. Evidence from aphasia (Nickels & Howard, 1999)
   - 2.1 Aphasic individuals often produce phonemes in correct order, but not correct stress pattern
   - 2.2 Are much better at naming items with more frequent stress patterns, e.g. **co**-tton *versus* bam-**boo**

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Five-minute exercise

Models of sentence production

1. Message level

2. Functional level

3. Positional level

4. Phonetic level

Bibliography

5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

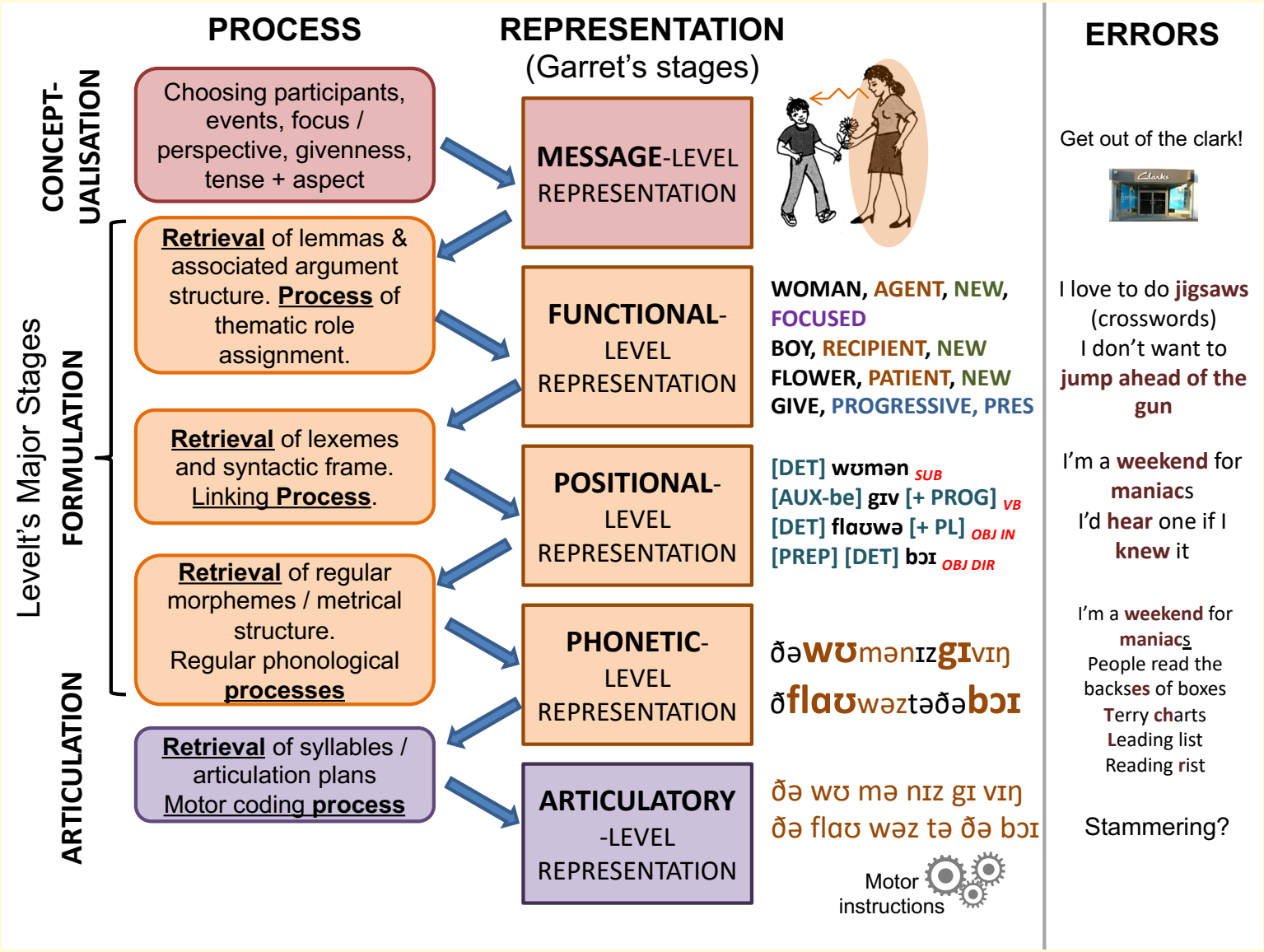
4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

4a. What information is represented at the phonetic level?



5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

4a. What information is represented at the phonetic level?

A phonological sequence consisting of segments, and information related to metrical structure (e.g. word stress).

Phonetically-variant lexemes/phonemes are realised at this level, e.g.

1. DETERMINER: A book / A**n** elephant
2. DETERMINER: Th**e** (ðə) man / Th**e** (ðiː) essay (tongue is retracted for second)
3. PARTICLE: I want t**o** (tuː) eat / I want t**o** (tə) drink (second is longer and involves more lip rounding)

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

4a. What information is represented at the phonetic level?

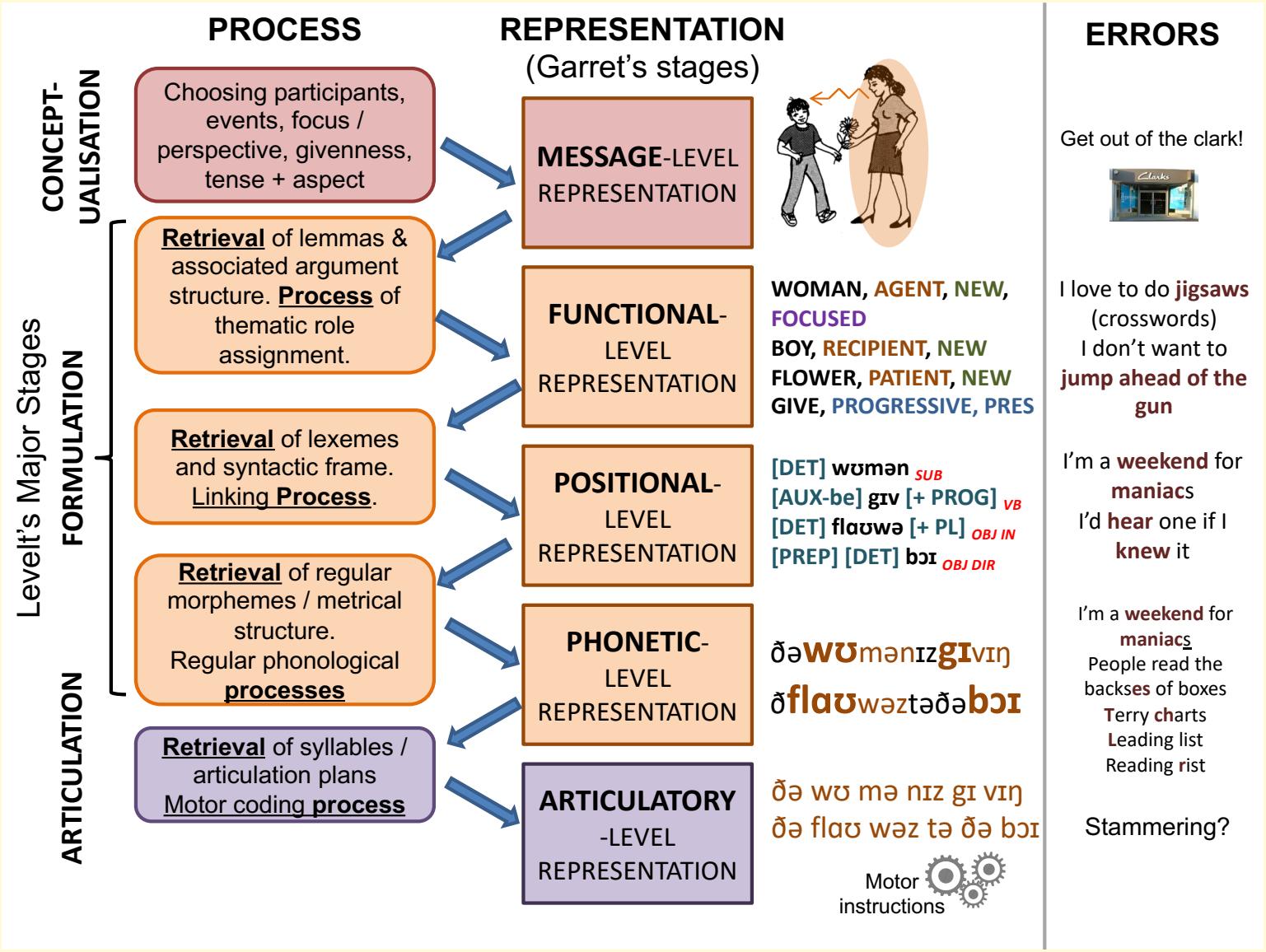
A number of errors may occur at this level including

1. Swapping errors, e.g. cherry tart ⇒ terry chart
2. Anticipation errors, e.g. cherry tart ⇒ terry tart
3. Perseveration errors, e.g. cherry tart ⇒ cherry chart

NB these errors respect syllabic position, so perhaps they occur later at the syllable retrieval stage?

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

4b. How do we get from the Phonetic level to the Articulatory level?



5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

4b. How do we get from the Phonetic level to the Articulatory level?

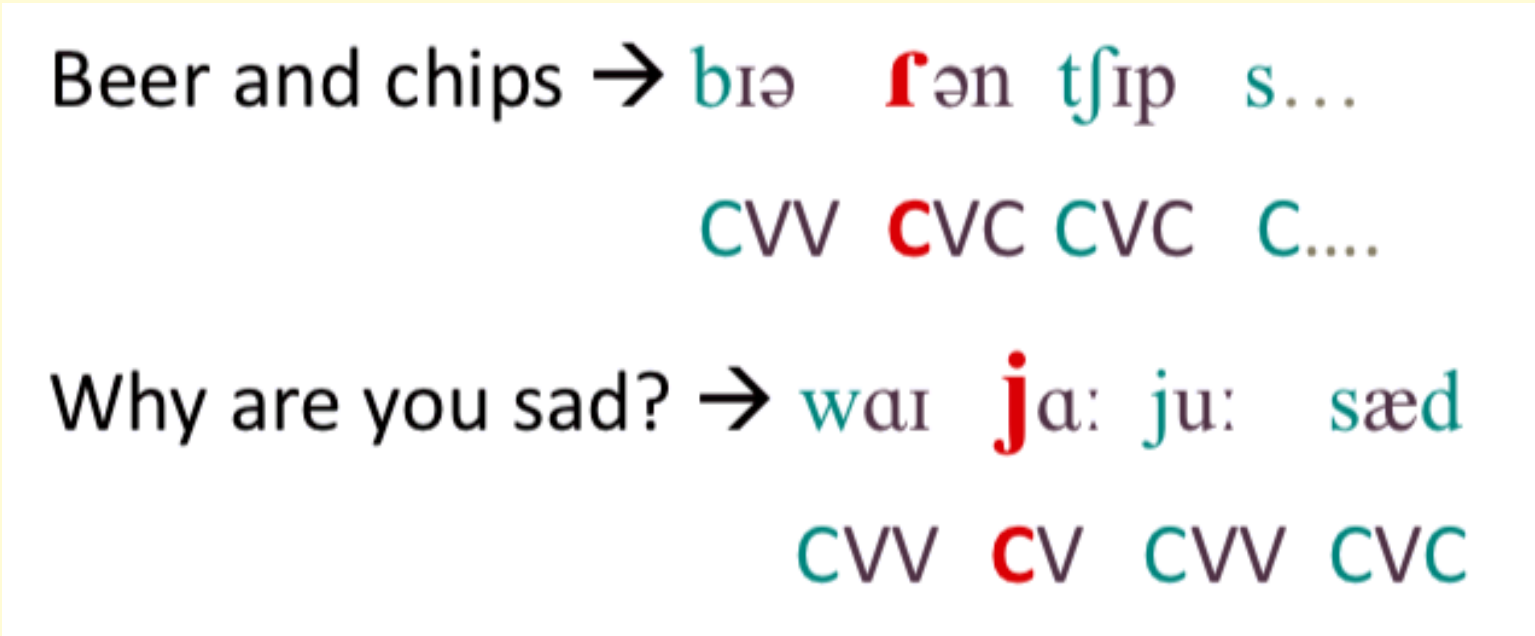
We **retrieve** syllables, along with their articulation plans.

We **assemble** motor instructions.

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Motivation for syllables as units of representation

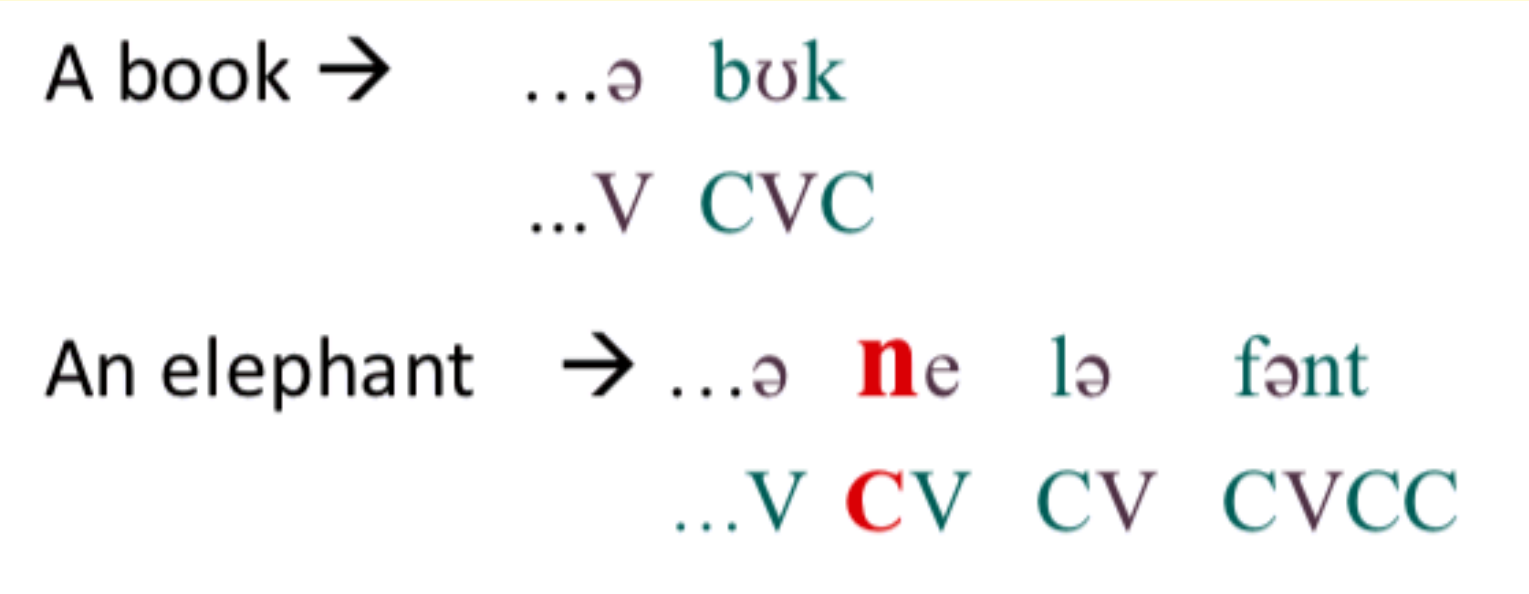
(a) Liaison (epenthesis)



5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Motivation for syllables as units of representation

(b) Resyllabification



5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Motivation for syllables as units of representation

(b) Resyllabification

1.	Football → fʊt bɒl	(syllable **final**)
2.	tipping → t^hɪ pɪŋ	(syllable **initial**)
3.	Glass tower → glɑ:s t^hɑʊ wə	(syllable **initial**)
4.	Last hour → lɑ:s t^hɑʊ wə	(syllable **initial**)

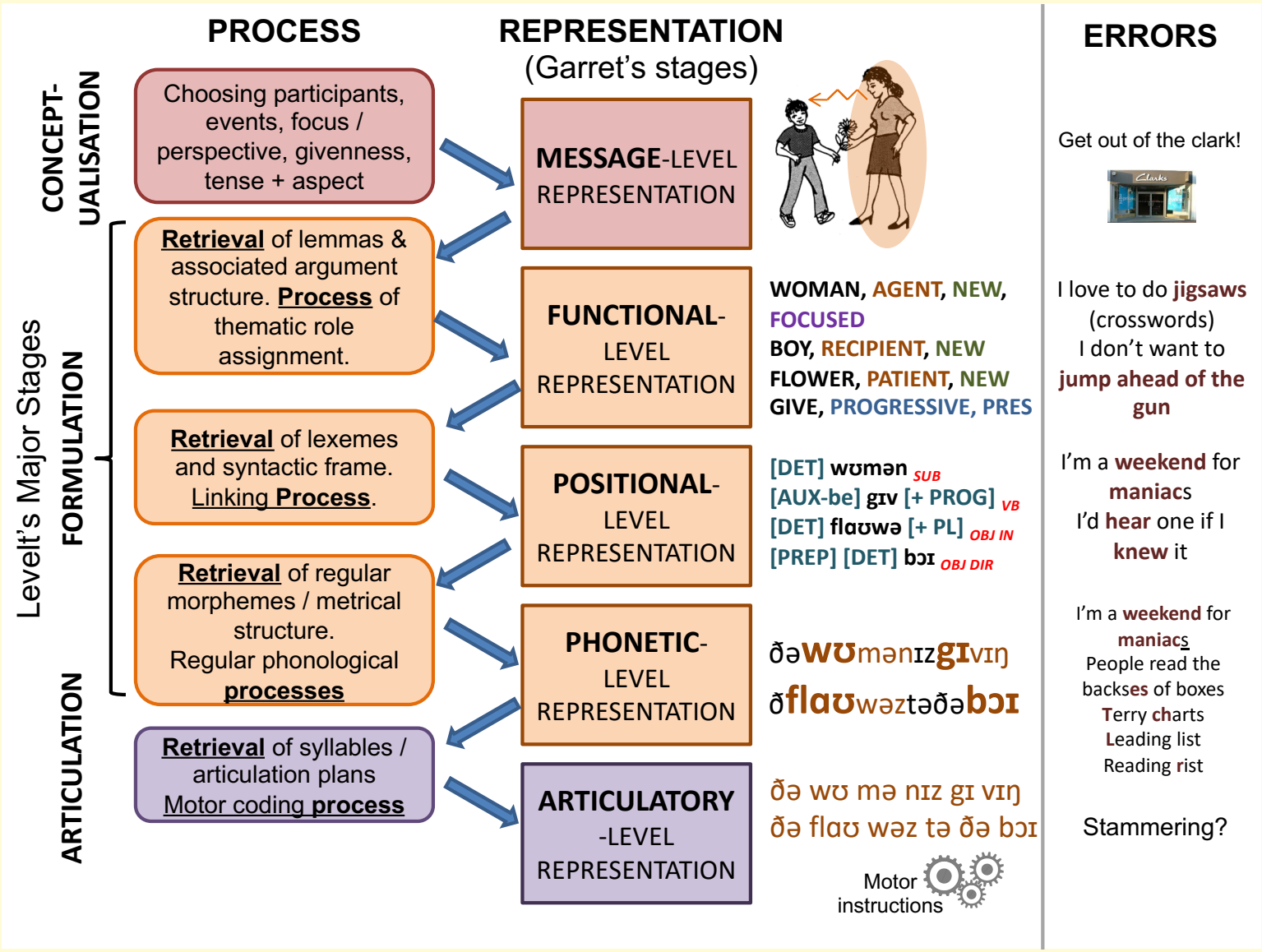
5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Motivation for syllables as units of representation

ワ wa	ラ ra	ヤ ya	マ ma	ハ ha	ナ na	タ ta	サ sa	カ ka	ア a
	リ ri		ミ mi	ヒ hi	ニ ni	チ chi	シ shi	キ ki	イ i
	ル ru	ユ yu	ム mu	フ fu	ヌ nu	ツ tsu	ス su	ク ku	ウ u
	レ re		メ me	ヘ he	ネ ne	テ te	セ se	ケ ke	エ e
ヲ wo	ロ ro	ヨ yo	モ mo	ホ ho	ノ no	ト to	ソ so	コ ko	オ o

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Motivation for syllables as units of representation



5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography

Five-minute exercise

Models of sentence production

1. Message level

2. Functional level

3. Positional level

4. Phonetic level

Bibliography

5 min ex.

5 min ex.

Mods of sent. prod

The model

Garrett's model

Levelt's model

1. Message level

1a. info at ML

1b. ML to FL

2. Functional level

2a. Info at FL

2b. FL to PosL

The linking problem

Errors in children

3. Positional level

3a. Info at PosL

PosL to PhonL

4. Phonetic level

4a. Info at PhL

4b. PhL to ArtL

Motivation for syllables as units of representation

Bibliography

Bowerman, M. (1982). Evaluating competing linguistic models of language acquisition data: developmental errors with causative verbs. Quaderni Di Semantica, 3, 5–66.

Ebbels, S. H., van der Lely, H. K. J., & Dockrell, J. E. (2007). Intervention for Verb Argument Structure in Children With Persistent SLI: A Randomized Control Trial. Journal of Speech, Language and Hearing Research, 50(5), 1330.

Garrett, M.F. (1975). Syntactic process in sentence production In G. Bower (Ed.). Psychology of learning and motivation: Advances in research and theory. 9:133-177.

Jackendoff, R. (1990). Semantic structures. MIT Press.

Levelt, W. J. M. (1989). Speaking: from intention to articulation. Cambridge, MA: MIT Press.

5 min ex.
5 min ex.
Mods of sent. prod
The model
Garrett's model
Levelt's model
1. Message level
1a. info at ML
1b. ML to FL
2. Functional level
2a. Info at FL
2b. FL to PosL
The linking problem
Errors in children
3. Positional level
3a. Info at PosL
PosL to PhonL
4. Phonetic level
4a. Info at PhL
4b. PhL to ArtL
Motivation for syllables as units of representation
Bibliography