SLE 50 – *What is in a Morpheme?*   Zürich, September 13th, 2017

Morpheme Repair

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Aims of the Talk

- Bring together insights of language production research and Distributed Morphology (DM)
- Analyze certain speech errors ("morphological accommodations") within DM and argue
  - **for** late insertion of derivational morphemes and late spell-out of roots
  - **against** repair strategies in language production
- If time allows: zoom in on (competing) nominalizations

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Overview

1. Speech errors and Distributed Morphology
   - 1.1 Production model and DM
   - 1.2 The speech error corpus
   - 1.3 'Accommodations'
2. Derivational morphology in speech errors
   - 2.1 Context-sensitive spell-out
   - 2.2 Morpheme insertion
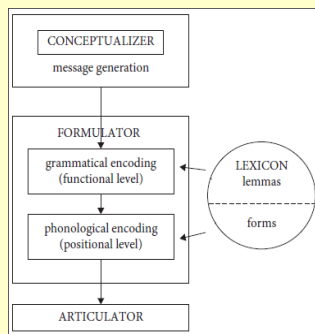   - 2.3 Competing nominalizations
3. Conclusion

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- 1 -
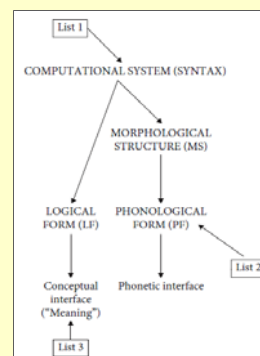## Speech Errors
and Distributed Morphology

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Starting Point: Production Model

CONCEPTUALIZER
message generation

FORMULATOR

grammatical encoding
(functional level)

LEXICON
lemmas
- - - -
forms

phonological encoding
(positional level)

ARTICULATOR

- From intention to articulation in production models (Garrett 1980a; Levelt 1989; Levelt et al. 1999)
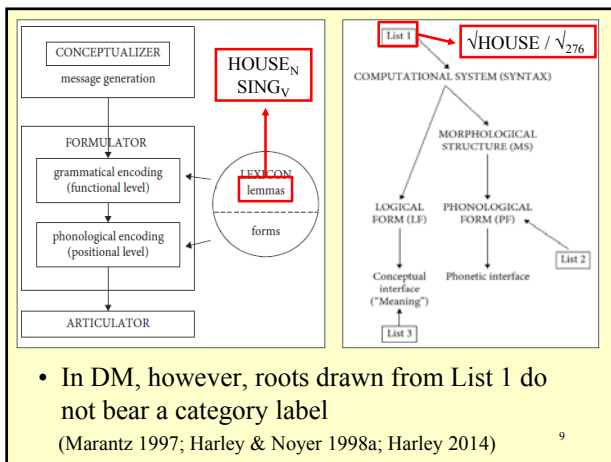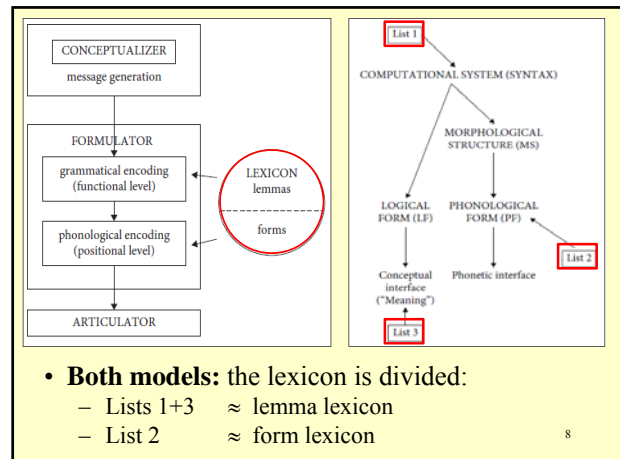- Grammatical encoding precedes phonol. encoding
- Two-step lexical retrieval

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Distributed Morphology (DM)

List 1

COMPUTATIONAL SYSTEM (SYNTAX)

MORPHOLOGICAL STRUCTURE (MS)

LOGICAL FORM (LF)   PHONOLOGICAL FORM (PF)

List 2

Conceptual interface ("Meaning")   Phonetic interface

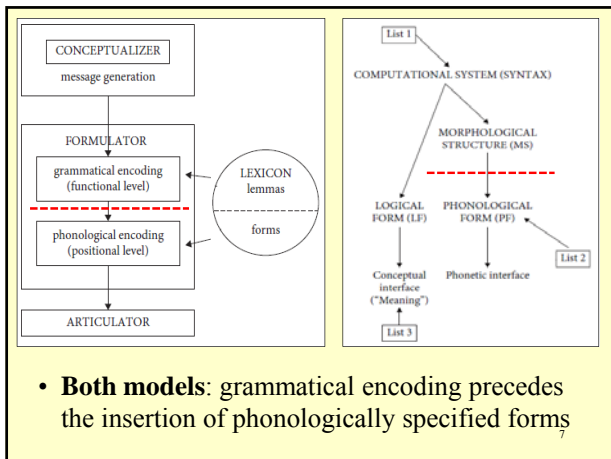List 3

- Syntactic computation precedes Spell-out
- Manipulation of roots and abstract features
- But: intervening level Morph. Structure
- No single lexicon:
  List 1: 'narrow' lexicon
  List 2: Vocabulary
  List 3: Encyclopedia

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- **Both models**: grammatical encoding precedes the insertion of phonologically specified forms

Slide 8

- **Both models:** the lexicon is divided:
  - Lists 1+3   ≈ lemma lexicon
  - List 2   ≈ form lexicon

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- In DM, however, roots drawn from List 1 do not bear a category label

  (Marantz 1997; Harley & Noyer 1998a; Harley 2014)

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semantic anticipation or perseveration	49
semantic anticipations	18
semantic perseverations	31
errors involving feature mismatch	406
subject-verb agreement errors	219
mismatch on pronominal element	45
mismatch within DP	96
subcategorization errors	46
stranding or shift of abstract feature	133
feature stranding	87
feature shift	46
errors involving accommodation	241
accommodation of error element	63
accommodation of context	129
morpheme insertion	34
lexical construal	15

Speech Error Corpus
(n = 829)

- Relevant errors from *Frankfurt Speech Error Corpus* plus collection of additional errors
- **Focus**

Slide 11

Context/Error Accommodation

- **Context:** noun exchange, followed by accommodation of determiner

er	hat	*das*	**Geld**	voller	**Tasche-n**
he	have.3.SG	the.N.ACC	money(N)	full.of	pocket-PL
←	*die*		*Tasche-n*	*voller*	*Geld*
←	the.PL.ACC		pocket(F)-PL	full.of	money(N)

'He has the pockets full of money.'

- **Error element:** anticipation of V; stranding of [+past] → accommodation of stem

wie	immer	*kam*	er,	äh,	versuch-te	er	pünktlich	zu	komm-en
as	always	come.PAST	he,	er,	try-PAST	he	on.time	to	come-INF

'As always, he tried to be on time.'

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Accommodations …

- … are errors "in which the phonetic shape of elements involved […] accommodates to the error-induced environment" (Garrett 1980b:263)
- … have been considered "a blind repair process which brings utterances in line with linguistic constraints" (Berg 1987:277)
- … are thus evidence for the fact "that the processing system is sensitive to the eventual output" (Berg 1987:277)

Accommodations and DM

- However, once we adopt DM mechanisms, the concept 'accommodation' becomes superfluous (Pfau 2009)
- All apparent repairs involve mechanisms that apply in the course of the syntactic derivation anyway
  - feature copy;
  - phonological readjustment;
  - morpheme insertion (next section).

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Feature Copy

er	hat	*das*	*Geld*	*voller*	*Tasche-n*
he	have.3.SG	the.N.ACC	money(N)	full.of	pocket-PL
←	*die*	*Tasche-n*	*voller*	*Geld*	
←	the.PL.ACC	pocket(F)-PL	full.of	money(N)	

'He has the pockets full of money.'

(i)   Exchange of roots (or rather NumP); in German, roots must carry gender feature
(ii) At MS, gender feature is copied onto D
(iii) Feature bundle [DEF,SG,NEUTER,ACC] is spelled out as *das*

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Phonological Readjustment

wie	*immer*	*kam*		*er,*	*äh,*	*versuch-te*	*er*	*pünktlich*	*zu*	*komm-en*
as	always	come.PAST		he,	er,	try-PAST	he	on.time	to	come-INF

'As always, he tried to be on time.'

(i)   Anticipation of root into a [+past] context
(ii) √KOMM is spelled out as *komm*, but in [+past] context, phonological readjustment applies: *komm* → *kam* / [+past]

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Limits of Accommodation

- Errors that occur at PF should never be subject to accommodation – and in fact, they aren't
- Exchange of consonants /b/ and /k/ resulting in existing noun *Kraut* ('cabbage')

ihr	*dürf-t*	*die*	*Kraut*	*büss-en,*
you(PL)	may-2.PL	the.F	cabbage(N)	(error)-INF
←	*die*	*Braut*	*küss-en*	
←	the(F)	bride(F)	kiss-INF	

'You may kiss the bride.'

- Too late for repair → feature mismatch

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Derivational Morphology in Speech Errors

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Context-sensitive Spell-out

- Phonological readjustment is not triggered by morphosyntactic feature but by licensing environment (Harley 1995; Siddiqi 2009)

this **content**...er, this article contains a lot of errors

der	*Sprung,*	*äh,*	*der*	*Funke*	*spring-t*	*über*
the.M	jump.NMLZ(M),	er,	the.M	spark(M)	jump-3.SG	over

'It clicks (between them).'

VI	√SPRING	↔	/ʃprɪŋ/
PRR:	/ɪ/	→	/ʊ/ / X ⇐ [–v][+d]

(where X = *spring, find* ('find'), …)

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Morpheme Insertion

- Some errors involve the apparent 'repair' (i.e. adaptation) of a derivational morpheme

> people still see Libya as a **nation**-al danger,
>   as a danger-ous nation

- Proposals concerning derivational morphemes:
  - (i) derivational morphemes are "functional roots" drawn from List 1 (Kihm 2005; de Belder 2011)
  - (ii) derivational morphemes are inserted at PF (Harley & Noyer 1998b; Marantz 2001)

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Morpheme Insertion

- **View (i)** is problematic as it would imply that List 1 is accessed again after the error has taken place in order to retrieve the appropriate derivational morpheme
- **View (ii)** is problematic in light of the fact that German nominalization suffixes determine the gender of the derived noun – and gender copy precedes Vocabulary Insertion

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Nominalization in Speech Errors

- German speech errors suggest that derivational morphemes are inserted at MS, before feature copy takes place
  - → nominalization suffixes have to be endowed with gender features

nerv-e	*die*	*Nahr-ung*,	*nähr-e*	*den*	*Nerv*
nerve-IMP	the.F	food-NMLZ(F)	feed-IMP	the.M	nerve(M)
'Feed the nerv!'					

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nerv-e	*die*	*Nahr-ung*,	*nähr-e*	*den*	*Nerv*
nerve-IMP	the.F	food-NMLZ(F)	feed-IMP	the.M	nerve(M)
'Feed the nerv!'					

(i) Within the computational system, √NAHR and √NERV are exchanged

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(i) Within the computational system, √NAHR and √NERV are exchanged

(ii) At MS, the morpheme [-*ung*(F)]$_\mu$ is inserted, presumably in little n

> Insert [-ung(F)]$_\mu$ /   √X ⇐ [n]
> (where √X = √NAHR ('feed'), √WOHN ('live'), √ERZÄHL ('tell'), …)

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nerv-e	*die*	*Nahr-ung*,	*nähr-e*	*den*	*Nerv*
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> (where √X = √NAHR ('feed'), √WOHN ('live'), √ERZÄHL ('tell'), …)

(iii) The gender feature of the morpheme is copied onto D (→ ***die** Nahr-ung*)

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Competing Nominalizations

- Often two or more different nominalizations are available for a single root

  a. | *schreib-t* | *man* | *das* | *mit* | *Binde-schrift* |
     |---|---|---|---|---|
     | write-3.SG | one | that | with | connect-write.NMLZ(F) |

     ← *mit Binde-strich*
     ← with connect-line(M)

     'Do you write that with a hyphen?'

  b. | *welch-er* | *Schreib-er,* | *Quatsch,* | *welch-er* | *Idiot* |
     |---|---|---|---|---|
     | what-M | write-NMLZ(M), | nonsense, | what-M | idiot(M) |

schreib-t	*denn*	*so*	*was*
write-3.SG	MOD.PART	such	a.thing

     'What idiot would write such a thing?!'

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Competing Nominalizations

- Why is √SCHREIB spelled out
  - as **Schrift** ('handwriting/script') in (a), but
  - as **Schreiber** ('writer') in (b)?
- Intuitively, the surface form matches the semantics of the target noun

  Strich ('line') → *Schrift* ('handwriting')
  Idiot ('idiot') → *Schreiber* ('writer')

  → this holds for all speech errors
- How to formally account for this match?

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Formal Account: 1st Attempt

- Functional structure within DP is responsible for choice of derivational suffix
- Presence of vP, VoiceP, AspP, etc. in deverbal nominalizations, e.g. event nominals (e.g. Harley & Noyer 1998b; Alexiadou 2001; Borer 2005; Harley 2009; Sleeman & Brito 2010)
- Consider e.g. the possibility that v is always present and specified for [±be] and [±cause] (Harley 1995)

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Schrift vs. *Schreiber*

- Non-eventive → v is specified for [+be]
- Insertion of zero suffix in n; phonological readjustment of VI

- Causative → v is specified for [+cause]
- Insertion of derivational suffix [-*er*(M)]$_\mu$ in n (Alexiadou & Schäfer 2010)
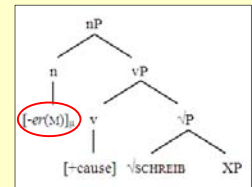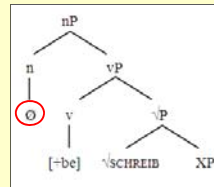
Formal Account: 1st Attempt

- **Problem:** often the target nouns are not (deverbal) nominalizations, i.e. they do not include the required functional structure

er	*hat*	*ein-e*	*Erzähl-ung,*	*äh,*	*ein-en*	*Schwank*
he	have.3.SG	a-F.ACC	tell-NMLZ(F),	er,	a-M.ACC	tale(M)

aus	*sein-er*	*Jugend*	*erzähl-t*
from	his-F.DAT	youth(F)	tell-PART

  'He has told a (merry) tale from his youth.'

- Presumably, the target noun *Schwank* ('tale') is simply a root dominated/licensed by n

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Formal Account: 1st Attempt

- That is, √ERZÄHL takes the position of √SCHWANK (just like √SCHREIB takes the slot of √IDIOT/√STRICH in the above errors)
- But there is no functional structure that would trigger the insertion of [-*ung*(F)]$_\mu$
- Can other features associated with n or other functional projections between nP and √P be held responsible?

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Formal Account: 2ⁿᵈ Attempt

- All nouns – event, result, and object nouns – contain n and presumably further functional structure, such as ClP (Borer 2005) and/or MassP (de Belder 2011)
- Compositional semantic features (CSFs) hosted by the corresponding functional heads might contribute to the choice of suffix
- CSFs present in the syntax include [±animate], [±count] (Marantz 1997)

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Formal Account: 2ⁿᵈ Attempt

- For the above example:
  (i) √ERZÄHL takes the position of √SCHWANK
  (ii) [–anim] and [+count] are either hosted by the same head, or the two heads **undergo fusion** (Siddiqi 2009)
  (iii) At MS, the suffix [-*ung*(F)]ₘ will be **inserted** in the context of [–anim;+count]
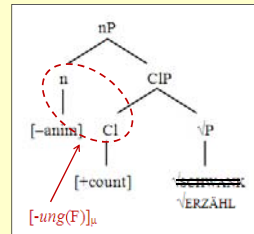
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Formal Account: 2ⁿᵈ Attempt

- In other words: features of heads with a more 'nominal flavour' (n, Cl, Mass) determine the choice of derivational affixes
- **Problem:** the CSFs presented above are most certainly not sufficient (cf. e.g. *trainer* vs. *trainee*)
- Also, some nominalizations are ambiguous
  - *Schön-heit* ('beauty'): characteristic vs. person
  - *read-er*: person vs. object / agent vs. theme
    (Alexiadou & Schäfer 2010)

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Conclusions

- DM-mechanisms like feature copy, morpheme insertion, and phonological readjustment allow for a "repair-free" derivation of complex speech errors
- Errors involving derivational morphemes
  - are evidence for morpheme insertion at MS;
  - are evidence for functional structure within DP
- It remains to be seen what features exactly trigger the choice of a derivational morpheme

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Thank you for your attention!

For a handout please contact me:
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Further Errors

- √SCHÖN ('beautiful') takes the position of √FRISUR ('hairdo') → insertion of [-*heit*(F)]ₘ

ihr-e	Schön-*heit,*		äh,	ihr-e	Frisur	ist	total	schön
her-F	beautiful-NMLZ(F),		er,	her-F	hairdo(F)	is	very	beautiful

'Her hairdo is very beautiful.'

- Error involves de-adjectival nominalization
- Target √FRISUR is [–anim;+count] but [-*heit*(F)]ₘ is [±count]

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Further Errors

- √TOUR takes the position of √IGNOR ('ignore')
  → insertion of [-*ismus*(M)]$_\mu$
- Other possible nominalizations of √TOUR are *Tour* and *Tourist*
- Both [-*anz*(F)]$_\mu$ and [-*ismus*(M)]$_\mu$ surface in [–anim;–count] contexts

der	**Tour**-ismus,	die	Ignor-anz	der	Tour-ist-en
the.M	tour-NMLZ(M),	the.F	ignor-ance(F)	of.the	tour-NMLZ(M)-PL
nimm-t		von	Jahr	zu	Jahr	zu
increase-3.SG	from	year	to	year	PARTICLE

'The ignorance of the tourists increases from year to year.'

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Further Errors

- Errors involving zero nominalizer and phonological readjustment in [n]-context
- In (b) both target and intruder are deverbal

a.
auf	ein-em	*Stand,*	auf	ein-em	Bein
on	one-M.DAT	stand.NMLZ(M),	on	one-N.DAT	leg(N)
kann	man	nicht	steh-en		
can	one	not	stand-INF		

'You can't stop at one!'

b.
ich	hab-e	ein-en	*Wurf*	ge-blick-t
I	have-1.SG	a-M.ACC	throw.NMLZ(M)	PART-glance-PART
←	ein-en	Blick	ge-worf-en	
←	a-M.ACC	glance(M)	PART-throw-PART	

'I have thrown a glance.'

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