

RG Lexical Restrictions October 14th, 2022

Subcategorization Errors in Language Production

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A Bit of History ...

- Life before / next to sign linguistics.
- Analysis of spontaneous German speech errors within the model of Distributed Morphology (Halle & Marantz 1993) → PhD dissertation (2000).
- Sign linguistic work started parallel as “hobby”.
- Published work on agreement errors (Pfau 2003) and accommodations (Pfau 2001, 2007).
- Monograph: revised and extended version of PhD thesis (Pfau 2009).

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Speech Errors

- Have been taken to reveal a speaker’s unconscious thoughts and desires (Freud 1901).
- May provide information on the nature of linguistic rules and processes that are active in language production (Meringer & Mayer 1895).
- Development of performance models based on slips of the tongue (Fromkin 1971; Garrett 1975).
- Extension to slips of the hand (Newkirk et al. 1980 for ASL; Leuninger et al. 2004 for DGS).

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Aims of the Presentation

- Bring together insights of language production research and Distributed Morphology (DM).
- Discuss some errors which involve a violation of subcategorization properties of a verb that surfaces in the erroneous utterance.
- Or, to put it differently: the utterance does not obey certain lexical restrictions imposed on verbs.

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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

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Overview

1. Speech errors and Distributed Morphology
2. Illustration of some mechanisms
 - 2.1 Context and error accommodations
 - 2.2 Agreement errors
3. Subcategorization errors
 - 3.1 Types of blends
 - 3.2 The production and grammar models

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Speech Errors and Distributed Morphology

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Starting Point: Production Model

- 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)

- Syntactic computation precedes Spell-out.
- Manipulation of roots and abstract features.
- But: intervening level Morphological 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.

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- **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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Illustration of some Mechanisms

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Context Accommodation

- German:** noun exchange, followed by accommodation of determiner.

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

‘He has the pockets full of money.’

- Turkish:** phoneme exchange, followed by vowel harmony in all suffixes.

<i>hukümet</i>	<i>kü-ül-me-si</i>	←	<i>hükümet</i>	<i>kur-ul-ma-sı</i>
(error)	(error)-PASS-NMLZ-POSS	←	government	form-PASS-NMLZ-POSS

‘formation of a government’

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Error Accommodation

- English:** exchange of Vs; stranding of [+/- past] → accommodation of stems (Garrett 1980: 264).

I don't know that I'd	<i>hear</i>	one if I	<i>knew</i>	it
←		←		

that I'd know one if I heard it

- German:** anticipated V lands in N-slot; → accommodation of stem (**note:** also context acc.).

<i>will-st</i>	<i>du</i>	<i>den</i>	<i>Gang</i>	<i>äh, die</i>	<i>Treppe</i>	<i>runter-geh-en</i>
want-2.SG	you(SG)	the.M	aisle(M), er, the.F	stairs(F)	down-go-INF	

‘Do you want to go down the stairs?’

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Accommodations ...

- ... are errors “in which the phonetic shape of elements involved [...] accommodates to the error-induced environment” (Garrett 1980: 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)

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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.

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Feature Copy

<i>er</i>	<i>hat</i>	<i>das</i>	<i>Geld</i>	<i>voller</i>	<i>Tasche-n</i>
he	have.3.SG	the.N.ACC	money(N)	full.of	pocket-PL
←	<i>die</i>	<i>Tasche-n</i>	<i>voller</i>	<i>Geld</i>	
←	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 /kom/, but in [+past] context, phonological readjustment applies:

/kom/ → /ka:m/ / [+past]

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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 ↔ /fprɪŋ/
 PRR: /ɪ/ → /ʊ/ / X ↔ [-v][+d]
 (where X = spring, find ('find'), ...)

← = 'is licensed by'

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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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Local Agreement Errors

- Verb erroneously agrees with a local noun within subject DP (see below), or with an object preceding the verb.

SVA-errors: agreement of verb with local noun in subject DP (n = 76)

Error source	PLURAL	SINGULAR
within genitive complement	42	1
and local to verb	40	1
and semi-local to verb	2	–
within prepositional phrase	28	5
and local to verb	23	5
and semi-local to verb	5	–
Total	70	6

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Local Agreement Errors

a. [die Einführung der neu-en **Münze-n** verlief-en
 the introduction the.GEN.PL new-PL coin-PL go.off.PAST-3.PL
 reibungslos ← die Einführung ... verlief reibungslos
 smoothly ← the introduction ... go.off.PAST.3.SG smoothly
 'The introduction of the new coins went off smoothly.'

b. weil er offensichtlich [reif-e **Dame-n**] bevorzug-en
 because he obviously mature-PL lady-PL prefer-3.PL
 ← weil er ... bevorzug-t
 ← because he ... prefer-3.SG
 '... because he obviously prefers mature ladies.'

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Defective Feature Copy

- Obviously, the processor selects wrong DP for feature copy – in almost all cases, this DP is linearly closer to the verb.
- Prominence of the [+PL] feature: in 91% of the cases, the erroneous agreement controller is specified for plural.
- Singular nouns are not specified for number, i.e., there is no feature [-PL] in List 1.

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Subcategorization Errors

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Errors Involving Feature Mismatch

- Subject-verb agreement errors (see above).
- Feature mismatch within DP (following, e.g., a blend or substitution).

das wird ein ganz spannend-es Wettkampf, ðh, Finale
 that be.FUT a.M/N very exciting-N competition(M), er, final(N)
 ← ganz spannend-es Finale // ganz spannend-er Wettkampf
 ← very exciting-N final(N) // very exciting-M competition(M)
 ‘That will be a very exciting final//competition.’

- Local agreement involving pronouns.
- Subcategorization errors.

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Subcategorization Errors

- Conflict between case-assigning element and case-marked argument.
- Verb surfaces with an argument that does not match its argument structure (AS) properties:
 - required argument is assigned wrong case;
 - there is a superfluous argument.
- Basically, all of these errors (43/46) result from phrasal blends, i.e., two semantically equivalent verbs with different AS compete.

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Examples

a. *wer hat dich am meisten imponier-t*
 who has 2.SG.ACC at.the most impress-PART
 ← dich ... beeindruck-t // dir ... imponier-t
 ← 2.SG.ACC impress-PART // 2.SG.DAT impress-PART
 ‘Who has impressed you the most?’

b. *eine Sprache, die bestimmt-en UG-Prinzip-ien verletz-t*
 a.F language(F) RELF certain-PL.DAT UG-principle-PL violate-3.SG
 ← die bestimmt-en UG-Prinzip-ien widersprich-t //
 ← RELF certain-PL.DAT UG-principle-PL contradict-3.SG //
die bestimm-t UG-Prinzip-ien verletz-t
 RELF certain-PL.ACC UG-principle-PL violate-3.SG
 ‘a language that contradicts//violates certain UG principles’

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Examples

a. *ich hab’s mir schon ge-ahn-t* ← *ich hab’s*
 I have.1.SG’it REFL already PART-suspect-PART ← I have.1.SG’it
mir ... ge-dach-t // *ich hab’s ... ge-ahn-t*
 REFL PART-think-PART // I have.1.SG’it PART-suspect-PART
 ‘I already thought so//I already suspected it.’

b. *das lohnt sich den Aufwand nicht*
 that is.worth REFL the.M.ACC effort(M) not
 ← *das lohnt sich nicht* // *das lohnt den Aufwand nicht*
 ← that is.worth REFL not // that is.worth the.M.ACC effort(M) not
 ‘That’s not worth it//That’s not worth the effort.’

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Word Blends

- Monolingual (a) vs. bilingual (b) blends.

a. *Hatte-st du ein-en gut-en Plitz*
 had-2.SG you(SG) a-M.ACC good-M.ACC (error)
 ← *ein-en gut-en Platz* // *ein-en gut-en Sitz*
 ← a-M.ACC good-M.ACC place(M) // a-M.ACC good-M.ACC seat(M)
 ‘Did you have a good seat?’

b. shot ← chaud [fo] // hot
 pinichon ← cornichon [kɔʁniʃɔ] // pickle (Grosjean 1982: 184)

- Two (semantically related) roots are selected from List 1; at PF two Vocabulary items (VI) are retrieved from List 2.

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Phrasal Blends

- May result in grammatical (a) or ungrammatical (b) utterance (gender mismatch).

a. er kann kein-g Fliege trüb-en ← kein Wässer-chen
 he can.3.SG no-F.ACC fly(F) cloud-INF ← no.N.ACC water-DIM(N)
 trüb-en // kein-er Fliege was zuleide tun
 cloud-INF // no-F.DAT fly(F) something harm do.INF
 'Butter wouldn't melt in his mouth//He wouldn't hurt a fly.'

b. er wohn-t in der vierten Stock, äh, Etage
 he live-3.SG in the.F.DAT fourth story(M), er, floor(F)
 'He lives on the fourth floor//story.'

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Phrasal Blends

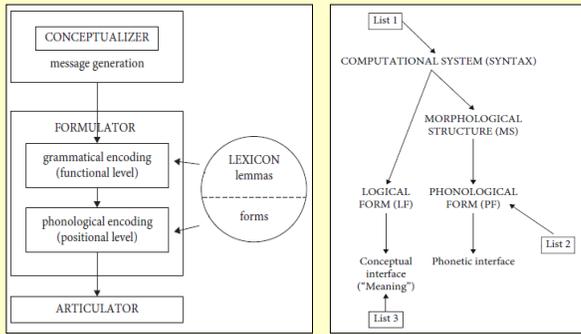
- In all phrasal blends, roots/features belonging to two different, yet semantically related, speech plans receive activation.
- In (a), the VI selected at PF corresponds to the root from which the gender feature has been copied.
- In (b), this is not the case; the two roots share one terminal node (cf. word blends); the VI that is inserted is not the one from which the gender feature has been copied.

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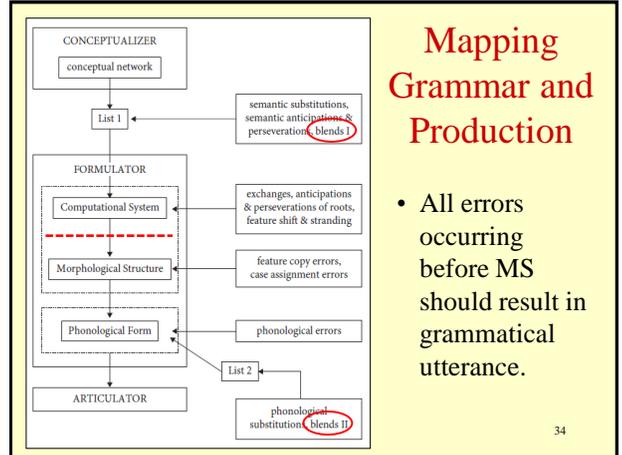
Production and Grammar Model



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Mapping Grammar and Production



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- All errors occurring before MS should result in grammatical utterance.

Subcategorization Errors

- Phrasal blends involving two competing verbs with different argument structures.
- Both corresponding roots enter the computational system.
- A decision between the roots is only made after case has been assigned at MS; the VI that is selected from List 2 does not correspond to the case-assigning root.

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Feature Mismatch

- DP-internal gender mismatch (a) vs. VP-internal case mismatch (b) – both resulting from blend.

a. ich habe leicht-es Kopfschmerz-en
 I have slight-N.ACC headpain(M)-PL
 ← leicht-es Kopfweh // leicht-e Kopfschmerz-en
 ← slight-N.ACC headache(N) // slight-PL.ACC headpain(M)-PL
 'I have a slight headache.'

b. wer hat dich am meisten imponier-t
 who have.3.SG 2.SG.ACC at.the most impress-PART
 ← dich ... beeindruck-t // dir ... imponier-t
 ← 2.SG.ACC impress-PART // 2.SG.DAT impress-PART
 'Who has impressed you the most?'

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Feature Mismatch

Errors that result in a morphosyntactic mismatch (n = 131)

feature mismatch within DP		85
due to a blend	48	
due to a noun substitution	13	
due to a noun exchange/anticipation	12	
due to determiner exchange/anticip./persev.	12	
subcategorization error		46
due to a blend	43	
due to noun/determiner anticip./perseveration	3	
Total		131

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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.
- Subcategorization errors result from the fact that a decision between two roots (verbs) is made too late, i.e., after case assignment has taken place at MS.

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