# When shifts root: Some observations regarding nouns and noun phrases in spontaneous speech errors

**Roland Pfau**
*ACLC, University of Amsterdam*

## 1 Introduction

Deciding on a topic for my contribution to this festschrift did not come easy. The obvious choice would have been a topic related to sign language structure – and indeed, I reviewed a couple of ideas. However, given that this volume celebrates Kees Hengeveld's academic achievements – and, on a more personal note, the wonderful and supportive colleague he has been for almost a quarter of a century – I finally decided to contribute a squib on the manipulation of nouns in spontaneous speech errors, as this topic has three straightforward links to studies that Kees has conducted over the years. First, I am focusing on a specific word class (and the nature of word classes more generally), and ever since his PhD thesis, Kees has had a keen interest in parts-of-speech (Hengeveld 1992; also see, e.g., Hengeveld 2013). Second, I discuss production data, and the Functional Discourse Grammar (FDG) model is characterized by a rigorous top-down architecture (Hengeveld & Mackenzie 2015), which aligns in important ways with that of serial models of language production (e.g., Levelt 1989). Third, on my only foray into the realm of (pre-FDG) Functional Grammar – a joint project with Dik Bakker – we actually addressed gender mismatches in spontaneous speech errors (Bakker & Pfau 2008).

In this squib, I will analyze selected German speech errors by applying theoretical assumptions from Distributed Morphology (DM; Halle & Marantz 1993; Siddiqi 2010). In a nutshell, DM assumes that the computational system manipulates nothing but abstract roots and morphosyntactic features, while phonologically specified Vocabulary items (VIs) are inserted into terminal nodes only after syntax ("late insertion"). In Section 2, I will focus on roots and show how DM-mechanisms ensure their correct spell-out in a specific context. In Sections 3 and 4, I then turn to proposals regarding the internal structure of determiner phrases (DPs) and consider in how far the speech error data provide evidence regarding such proposals. I address certain predictions concerning the processing of the number feature (Section 3) and further functional structure that may impact the choice of derivational morphemes (Section 4).

*Linguistics in Amsterdam, 2024: 135–142*

## 2 In good shape: Spelling out roots in context

Ideas about the nature of roots have changed considerably since the early days of DM. The original proposal of DM assumed that there was only one syntactic element √ROOT, and that the terminal node containing √ROOT needed to be realized by some sort of content morpheme (Marantz 1995; Harley & Noyer 2003). In Pfau (2000, 2009), I have argued that such a view cannot be maintained in the light of speech error data (in particular, noun substitutions). Rather, roots that are manipulated by syntax need to be particular to the specific concept they are linked to, and the VIs that spell out these specific roots (e.g., √CAT vs. √DOG) are in competition with each other. As pointed out by Siddiqi (2009), this proposal has largely been adopted by the DM community. Finally, Harley (2014: 242) argues that roots "must have individuation criteria that do not depend on semantic or phonological content", and she therefore suggests to notate abstract roots with numerical indices rather than language-specific labels, e.g., $\sqrt{}_{279}$ instead of √CAT. This suggestion makes a lot of sense, for instance, in the case of bilinguals; yet, for reasons of readability, I will continue to use German labels for the roots I am going to discuss.

However, what all of the above proposals have in common is that roots are assumed to be acategorial, that is, they are not specified for word class, but only receive their word class by virtue of appearing in a specific functional context. For nouns, the focus of the present paper, this functional context is a determiner, or, put differently, a root that is locally licensed by [+d] will be spelled out as a noun. At the point of spell-out, phonological readjustment and/or morpheme insertion may apply. In (1), I illustrate these mechanisms by means of two German speech errors – both are self-corrected anticipations.[1]

In (1a), √SPRING ('jump') is anticipated into a position in which it is licensed by a determiner. Now, while the English VI /dʒʌmp/ may occupy both a verbal or a nominal slot, in German, the nominal form is characterized by ablaut – and this is what we observe in (1a). Things are different in (1b), where the anticipated √WOHN ('live') does not change its form when spelled out in the erroneous slot. However, when licenced by [+d], the VI combines with the nominalizing suffix *-ung*, which is not part of the intended utterance (note that *Wohnung* means 'apartment/flat').

[1] All examples come from my own corpus of speech errors (N = 832), which contains relevant slips extracted from the *Frankfurter Versprecherkorpus*, as well as slips that I collected myself over the years. In the slip data, the error element is presented in bold face, while the position where the error element originates is underlined. In errors that are not self-corrected, the intended utterance appears to the right of the arrow. Only the intended utterance is translated.

(1) a. *Der* ***Sprung****, äh, der Funke* *spring-t* *über.*
the.M jump(M), er, the.M spark(M) jump-3SG over
'It clicks (between them).'

b. *Das war zufällig die* ***Wohn****-ung, äh, die Straße,*
that was coincidentally the.F live-NMLZ(F), er, the.F street(F)
*in der er* *wohn-t.*
in which(F) he live-3SG
'Coincidentally, it was the street in which he lives.'

Why is this intriguing? Well, traditionally errors of the above type have been referred to as accommodations, that is, they have been taken to involve "a blind repair process which brings utterances in line with linguistic constraints" (Berg 1987: 277; cf. also Garrett 1980). However, once we adopt DM mechanisms, the idea of a repair process becomes entirely superfluous. The mechanisms that bring the utterance in line with linguistic constraints, such as phonological readjustment (1a) and morpheme insertion (1b), are mechanisms that apply in the derivation of the utterance anyway. In (1a), for instance, there is no phonological form /ʃprɪŋ/ that would have to be repaired once the error has taken place; rather √SPRING is simply spelled out as /ʃprʊŋ/ in an environment in which it is licensed by [+d] (Pfau 2007, 2009).

## 3 Exchanging constraints, er, constraining exchanges

In the previous section, I already alluded to functional structure within the DP by referring to a functional element that licenses a lexical root, thus potentially impacting its spell-out. In this and the next section, I discuss further aspects of DP-internal functional structure that have been suggested in the literature, and investigate in how far speech errors provide evidence for such structure.

First, I address the number feature. It has been suggested that the DP includes a projection below D hosting the number feature: NumP (e.g., Ritter 1991), as shown in Figure 1. Interestingly, in noun exchanges, it is commonly the case that singular and plural nouns interact, and thus different options for the exchange of material emerge. In (2), I illustrate these options by means of a hypothetical English error. The intended utterance, which includes two DPs with different number specification and different material in D, should present us with four logical exchange options, listed in (2a–d), depending on whether the root is exchanged together with the number feature and/or the determiner.

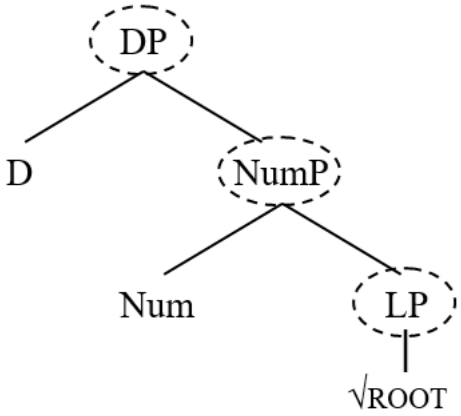


**Figure 1**: Number phrase within the DP (LP = lexical phrase, which hosts an acategorial root; the dashed circles indicate the phrases that may be affected in speech errors)

(2) Intended utterance: *the solution for our problems*

a. *the problem for our solutions* → root exchange, number stranding
b. *the problems for our solution* → NumP exchange, D stranding
c. *our problems for the solution* → DP exchange
d. *our problem for the solutions* → unattested

However, in the German speech error data, only options (2a–c) are attested. Option (2a) is illustrated by the slip in (3), which actually inspired our hypothetical example in (2). Here, only roots are exchanged, while the number feature and the material in D remain in place, i.e., they are stranded. In (3b), the NumPs are exchanged, i.e., roots together with their number features, thus exemplifying option (2b). Finally, in (3c), full DPs (marked by brackets) are exchanged, which corresponds to option (2c).[2]

(3) a. *das* ***Problem*** *alle-r* *eure-r* ***Lösung****-en*
the.N problem(N) all-GEN your(PL)-GEN solution-PL
← *die* *Lösung* *alle-r* *eure-r* *Problem-e*
← the.F solution(F) all-GEN your(PL)-GEN problem-PL
'the solution to all your problems'

[2] The attentive reader will have noticed that in all three examples, further changes are observed following the exchange: in (3a) and (3b), the first determiner is spelled out according to the gender feature (neuter) of the exchanged nouns; in (3a), the appropriate plural allomorph is selected; and in (3c), the first DP is appropriately accusative-marked by the existential verb *geben* (which means 'exist' in this case). As explained in Section 2, these changes result from operations that apply in the course of the derivation anyway. In (3a), e.g., the gender feature of *Problem* is copied onto the determiner *following* the exchange of roots, but *before* Vocabulary insertion takes place.

b. *Er hat das **Geld** volle-r **Tasche-n**.*
he has the.N money(N) full-GEN pocket-PL
← *die Tasche-n voller Geld*
← the.PL pocket-PL full-GEN money(N)
'He has pockets full of money.'

c. *Es gib-t [**die Straße**] in [**drei Restaurants**],*
it give-3SG the.ACC.F street(F) in three restaurant-PL,
*äh, drei Restaurant-s in der Straße.*
er, three restaurant-PL in the.DAT.F street(F)
'There are three restaurants in that street.'

The fact that option (2d) is (to date) unattested is exactly what one would predict given the structure in Figure 1: DPs cannot be exchanged without bringing along all the material below D, and this includes the number feature. Assuming a structure like the one in Figure 1 thus allows for testable predictions regarding possible and impossible speech errors.

## 4 Competing nominalizations: May the best fit win!

As a last ingredient to the discussion regarding the behavior of nouns in speech errors, I briefly address derivational morphology, specifically the issue of competing nominalizations. Remember that I have argued regarding the slip in (1a) that the anticipated root √SPRING is spelled out correctly as /ʃprʊŋ/ in an environment in which it is licensed by a determiner, i.e., in a nominal environment. However, *Sprung* is not the only available nominalization for that root: *Springer* ('jumper' or, in the context of chess, 'knight'), which involves the nominalizing suffix *-er*, would have been an alternative option. In (4), I provide two further illustrations of such a morphological competition.

In (4a), √VERKAUF ('sell') is anticipated from a verbal into a nominal slot, where it combines with a nominalizing (agentive) suffix (in addition, we observe umlaut within the stem). In (4b), also an anticipation, √HERRSCH ('rule') ends up in a position where it is licensed by a determiner and combines with the nominalizer *-(sch)aft* (*Herrschaft* means 'ruling/leadership').

(4) a. *Sein **Verkäuf**-er, äh, sein Freund hat sein-en*
his.M sell-NMLZ(M), er, his.M friend(M) has his-ACC.M
*Mercedes verkauf-t.*
Mercedes(M) sell-3SG
'His friend sold his Mercedes.'

b. *Während* *der* ***Herrsch****-aft*,
during the.DAT.F rule-NMLZ(F),
*während* *der* *Diktatur* *herrsch-te* *oft* *Not.*
during the.DAT.F dictatorship(F) rule-PST often hardship
'During the dictatorship, there was often hardship.'

Yet, just as in (1a), in both cases, alternative nominalizations would have been available: *Verkauf* ('sale') in (4a) and *Herrsch-er* ('ruler') in (4b). One may therefore wonder why the *-er* nominalizing suffix surfaces in (4a) but not in (4b). In a sense, in (4a), *Verkauf* would have been a more "economic" option, as it requires neither morpheme insertion nor a phonological change within the stem.

However, the observed surface forms match the semantics of the target nouns, and I would therefore like to argue that these errors provide evidence for a richer featural make-up and/or additional functional structure within DP. In (4a), a compositional semantic feature like [+animate] would probably do the job, as the event noun *Verkauf* is incompatible with that feature (Marantz 1997). That is, in (4a), insertion of the suffix is not just triggered by the fact that the root surfaces in a [+d] context; rather, the root, or another functional position within DP, must also be specified for an additional feature. A similar argument can be made for (4b), where both the target and the intruding noun are non-eventive and stative, while the alternative nominalization *Herrscher* would be animate and agentive. In fact, insertion of a suffix like *-schaft* has been argued to be triggered by additional functional structure within DP, possibly a light verb phrase (Harley 2009; cf. also de Belder 2011).

## 5 Conclusion

In previous work, I have argued – based on German speech error data – that DM makes for a psychologically real model of grammar, as it allows for an elegant account of oftentimes rather complex error patterns (some of which I discussed in this paper). In fact, I suggested that the grammar model can be mapped onto the psycholinguistic production model: in both, the generation of an utterance proceeds from a conceptual level via syntactic (and morphological) computation to phonological spell-out (Vocabulary insertion, in DM terms), and errors may occur at each level. This is not unlike the FDG architecture and, as briefly pointed out in Section 1, the idea that "a model of grammar will be more effective the more its organization resembles language processing in the individual" is also endorsed in FDG (Hengeveld & Mackenzie 2015: 313).

It may thus well be the case that the FDG model fares just as well when it comes to explaining the speech error data as the DM model – but this remains to

be demonstrated. If the reader interprets this concluding remark as an invitation to an FDG-inspired analysis, then she/he interprets it correctly.

## References

Bakker, Dik & Roland Pfau. 2008. Agreement in the noun phrase: The dynamic expression of terms and what can go wrong. In Daniel García Velasco & Jan Rijkhoff (eds.), *The Noun Phrase in Functional Discourse Grammar*. Berlin: Mouton de Gruyter, 287–320. https://doi.org/10.1515/9783110205374.287

Berg, Thomas. 1987. The case against accommodation: Evidence from German speech error data. *Journal of Memory and Language* 26: 277–299. https://doi.org/10.1016/0749-596X(87)90115-X

de Belder, Marijke. 2011. *Roots and Affixes: Eliminating Lexical Categories from Syntax*. PhD dissertation, University of Utrecht.

Garrett, Merrill F. 1980. The limits of accommodation: Arguments for independent processing levels in sentence production. In Victoria A. Fromkin (ed.), *Errors in Linguistic Performance. Slips of the Tongue, Ear, Pen, and Hand*. New York: Academic Press, 263–271.

Halle, Morris & Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In Kenneth Hale & Samuel Jay Keyser (eds.), *The View from Building 20: Essays in Linguistics in Honour of Sylvain Bromberger*. Cambridge, MA: MIT Press, 111–176.

Harley, Heidi. 2009. The morphology of nominalizations and the syntax of vP. In Anathasia Giannakidou & Monika Rathert (eds.), *Quantification, Definiteness, and Nominalization*. Oxford: Oxford University Press, 321–343. https://doi.org/10.1093/oso/9780199541089.003.0013

Harley, Heidi. 2014. On the identity of roots. *Theoretical Linguistics* 40(3/4): 225–276. https://doi.org/10.1515/tl-2014-0010

Harley, Heidi & Rolf Noyer. 2003. Distributed Morphology. In Lisa Cheng & Rint Sybesma (eds.), *The Second Glot International State-of-the-article Book. The Latest in Linguistics*. Berlin: Mouton de Gruyter, 463–496. https://doi.org/10.1515/9783110890952.463

Hengeveld, Kees. 1992. *Non-verbal Predication: Theory, Typology, Diachrony*. Berlin: Mouton de Gruyter. https://doi.org/10.1515/9783110883282

Hengeveld, Kees. 2013. Parts-of-speech system as a basic typological determinant. In Jan Rijkhoff & Eva van Lier (eds.), *Flexible Word Classes: Typological Studies of Underspecified Parts of Speech*. Oxford: Oxford University Press, 31–55. https://doi.org/10.1093/acprof:oso/9780199668441.003.0002

Hengeveld, Kees & J. Lachlan Mackenzie. 2015. Functional Discourse Grammar. In Bernd Heine & Heiko Narrog (eds.), *The Oxford Handbook of Linguistic Analysis* (2nd edition). Oxford: Oxford University Press, 367–400. https://doi.org/10.1093/oxfordhb/9780199544004.013.0015

Levelt, Willem J.M. 1989. *Speaking. From Intention to Articulation*. Cambridge, MA: MIT Press. https://doi.org/10.7551/mitpress/6393.001.0001

Marantz, Alec. 1994. A late note on late insertion. In Young-Sun Kim (ed.), *A Festschrift for Dong-Whee Yang: Explorations in Generative Grammar*. Seoul: Hankuk Publishing, 396–413.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. *University of Pennsylvania Working Papers in Linguistics* 4.2: 201–225.

Pfau, Roland. 2000. *Features and Categories in Language Production*. PhD dissertation, Johann Wolfgang Goethe Universität, Frankfurt am Main.

Pfau, Roland. 2007. Cheap repairs: A Distributed Morphology toolkit for sentence construction. *MIT Working Papers in Linguistics 53 (The State of the Art in Speech Error Research: Proceedings of the LSA Institute Workshop*, ed. by C.T. Schütze & V.S. Ferreira). Cambridge, MA: MITWPL, 9–33.

Pfau, Roland. 2009. *Grammar as Processor: A Distributed Morphology Account of Spontaneous Speech Errors*. Amsterdam: John Benjamins. https://doi.org/10.1075/la.137

Ritter, Elizabeth. 1991. Two functional categories in Modern Hebrew noun phrases. In S. Rothstein (ed.), *Syntax and Semantics 25. Perspectives on Phrase Structure: Heads and Licensing*. New York: Academic Press, 37–60. https://doi.org/10.1163/9789004373198_004

Siddiqi, Daniel. 2009. *Syntax Within the Word: Economy, Allomorphy, and Argument Selection in Distributed Morphology*. Amsterdam: John Benjamins. https://doi.org/10.1075/la.138

Siddiqi, Daniel. 2010. Distributed Morphology. *Language and Linguistics Compass* 4(7): 524–542. https://doi.org/10.1111/j.1749-818X.2010.00212.x