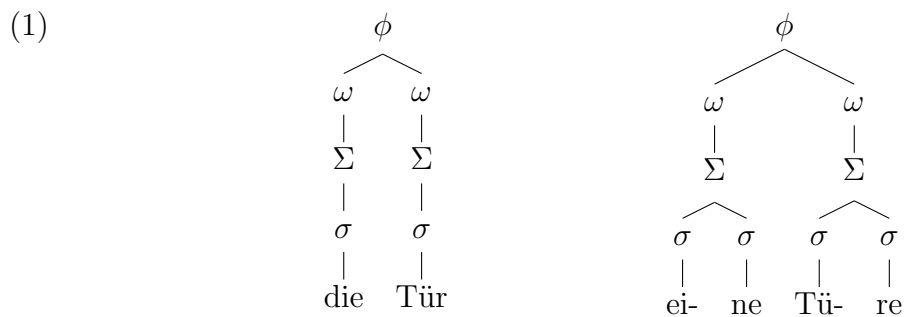


# Problems of prosodic parallelism – a reply to Wiese & Speyer (2015)

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## 1 Prosodic parallelism and its virtues

In their recent contribution, Wiese and Speyer (2015) come forward with a very interesting proposal regarding the effect of supra-lexical prosody on word prosodic structure. The proposal, the simplicity and elegance of which is captivating, is this: when given the choice, speakers strive for a rendition that maximizes prosodic parallelism; for two words that are prosodic phrase mates the foot structures are preferably parallel, i.e. the feet have the same number of syllables and stress pattern. Wiese & Speyer build their account of prosodic parallelism on the analysis of schwa-zero alternations, examining a large corpus of written German. Specifically, they investigated several cases of nouns with apparently freely alternating monosyllabic and disyllabic variants like *Tür* – *Türe* (‘door’) (1) or *Tags* – *Tages* (‘day<sub>Gen</sub>’) in the context of (preceding) monosyllabic or disyllabic determiners.



Using chi-square tests on bigram frequencies, they disprove statistical independence of the prosodic shapes of co-occurring determiner and noun, at least for the majority of the cases they investigated.<sup>1</sup> The results suggest that, more often than

<sup>1</sup>Wiese & Speyer present a lot of confirmatory evidence but also discuss several cases in which the predictions of parallelism are not borne out. The effect appears to be modulated by frequency and lexicalization such that high frequency nouns and lexicalized determiner-noun combinations are less prone to be affected by parallelism. In the end, the variety of cases presented in favor

not, the number of syllables in the alternating noun corresponds to the number of syllables in the determiner, in line with the assumption of a constraint on prosodic parallelism.

This proposal is interesting and important for a number of reasons; here, I will raise three points that were not explicitly mentioned by Wiese & Speyer:

First, the proposal connects well with (psycho)linguistic evidence to the effect that language users favor equal-sized constituents on many levels of phonological representation and processing (Ferreira, 2002; Fodor, 1998; Ghini, 1993; Myrberg, 2013; Schweitzer et al., 2011, among others).

Second, there are phenomena that would defy proper analysis without recourse to a constraint on prosodic parallelism; these are cases in which the parallelism constraint appears to have a stronger influence than in the German schwa-zero alternations, in which parallelism is merely a tendency. Consider Standard Chinese, in which the productivity of N+N compounds and V+Obj combinations is strictly constrained by the number of syllables. As Duanmu (2012) shows, parallel prosodic structures with either two monosyllables (1+1) or two disyllables (2+2) are generally licit for both constructions. Crucially, however, for N+N compounds, non-parallel structures of the 1+2 type are mostly unacceptable. Similarly, for V+Obj phrases, the imbalanced pattern 2+1 is considered unacceptable (cf. Luo and Zhou, 2010, for pertinent neurolinguistic evidence).

Another case demonstrating the influence of parallelism, again in German morphonology, is rhyme and ablaut reduplication (Kentner, 2015a). These reduplications have a strict non-identity requirement concerning base and reduplicant (*schickimicki*, *\*schickischicki* < *schick*, ‘posh’). Crucially, however, non-identity is confined to the segmental tier. That is, a difference between base and reduplicant concerning the prosodic shape is prohibited (*\*schischicki*, *?schickischick*), and it is this prohibition that strongly suggests the workings of prosodic parallelism.

Third, in indicating the force of parallelism in German morphonology, the proposal provides a striking argument for the hypothesis that poetic language - in which prosodic parallelism is prevalent - avails itself of constraints that are anyway active in normal language.

In the following, I will discuss three problems of Wiese & Speyer’s application of the parallelism proposal to German schwa-zero-alternations. The first problem relates to the locus, or loci, of parallelism within the prosodic hierarchy. The second problem touches Wiese & Speyer’s assumption that monosyllabic function

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of prosodic parallelism is convincing, but since a corpus analysis cannot possibly examine all potential cases in which parallelism is relevant, it remains unclear whether the sample is really representative.

words project a prosodic foot. The third, related, problem concerns the underlying assumption that prosodic phrases are built in accordance with the syntactic structure, to the effect that that determiner and noun are prosodic phrase mates. As I will show, all three problems make it difficult to evaluate Wiese & Speyer’s proposal in relation to German schwa-zero alternations.

## 2 Problems of parallelism

### 2.1 The loci of parallelism within the prosodic hierarchy

Wiese & Speyer’s approach to prosodic parallelism raises the question of which level of the prosodic hierarchy it may affect. This problem is best illustrated with cases that seemingly violate prosodic parallelism on one level of the hierarchy but at the same time ensure parallelism on another (higher) level. Consider (2) with the monosyllabic determiner *des* adjacent to the disyllabic form *Tages*. Under Wiese & Speyer’s approach, the monosyllabic determiner should give rise to a preference for the monosyllabic noun *Tags* in this position. However, in the context of the phrase *am Ende*, the disyllabic variant leads to neatly parallel prosodic structures between the two phonological phrases (irrespective of whether the determiner is considered an unparsed syllable (2-a) or promoted to a foot (2-b) – on which more below). Conversely, the monosyllabic variant *Tags* would, in this context, undo the parallelism between the phonological phrases while achieving parallelism within one of them (but only under the analysis in (2-b), which presupposes that the determiner does project a foot).

- (2)    a.     $(am_{\sigma} (En.de)_{\Sigma})_{\phi} (des_{\sigma} (Ta.ges)_{\Sigma})_{\phi}$   
           b.     $((am)_{\Sigma} (En.de)_{\Sigma})_{\phi} ((des)_{\Sigma} (Ta.ges)_{\Sigma})_{\phi}$   
                   at-the end the day<sub>Gen</sub>  
                   at the end of the day

Wiese & Speyer’s examination of the data is blind to effects of parallelism at higher levels of the prosodic hierarchy as their survey is focused on bigram frequencies, thus ignoring effects of the wider context. The general question evoked by cases like (2) is how parallelism at one level (between neighboring feet, say) interacts with parallelism at other levels (between phonological phrases). The case in (2) may be special because it is a set phrase used idiomatically – the higher-level prosodic parallelism (as between the phrases *am Ende* and *des Tages*) may possibly only develop in idiomatic contexts that guarantee a high co-occurrence of the words involved. In any case, it appears that the predictive power of prosodic parallelism is undermined without further specification of the prosodic level(s) it exerts their influence on.

## 2.2 The prosodic status of function words

Wiese & Speyer’s interpretation of the attested non-independence of prosodic shapes of determiner and noun presupposes that monosyllabic function words correspond to feet ( $(des)_\Sigma$   $(Tags)_\Sigma$  vs.  $(ei.nes)_\Sigma$   $(Ta.ges)_\Sigma$ ). However, the evidence for this assumption is weak at best.

While disyllabic determiners like *eine* (Engl.:  $a_{fem}$ ) or demonstrative pronouns like *diese* (Engl.  $this_{fem}$ ) are clearly trochaic in citation form, it is unclear whether monosyllabic function words project a foot on their own. Indeed, in contrast to their English equivalents (*the* [ðə]), monosyllabic determiners in German have full vowels in citation form and fulfill the minimal requirement for phonological words in that they feature at least a long vowel (*die* [di:]) or a coda (*das* [das]) – that is two morae. Accordingly, assuming with the proponents of the prosodic hierarchy that wordhood implies the projection of at least a foot, these function words do correspond to feet. However, it does not seem outlandish to assume that the bimoraicity is not an inherent feature of the determiners but a consequence of their contextual isolation when uttered in careful pronunciation or in citation form – similar to the English determiner *the* that is phonologically enriched, as it were, when accented.

In actual speech, determiners and other function words are regularly subject to reduction (Hall, 1999; Kabak and Schiering, 2006; Vogel, 2006; Wiese, 1987). With respect to these parts of speech, reduction to moraeless syllables may even be considered the norm rather than the special case. To be sure, this does not only hold for the monosyllabic forms but also for determiners that are disyllabic in citation form ([nə’ty:ɐ̯] is orthographically represented as *’ne Tür* in more casual writing styles).

When considering the normal, reduced or even moraeless pronunciation of the determiners in connected speech, prosodic parallelism cannot easily be made responsible for the correlation regarding the prosodic shapes of determiner and noun that was found in the written corpora. For moraeless determiners cannot project a foot on their own, at least not under the standard assumption that a foot requires at least two morae. Instead, the determiner would have to be represented as an unparsed or cliticized syllable.

One may certainly argue that the reductions happen only by way of phonetic interpretation but do not affect the underlying phonological representation, in which even function words license feet (cf. the concept of Foot Deletion or Defooting in Wiese (1987)). This argument is difficult to disprove, but it begs the question of whether feet are necessarily part of the lexical representation, which is especially doubtful in the case of function words. There is considerable evidence suggesting that feet are built in context, i.e. at least partially independent of the lexicon, and this will be reviewed in the following.

## 2.3 Prosodic phrasing and pedification beyond the word

Another problem concerning the workings of prosodic parallelism is rooted in the phonological phrasing that is assumed by Wiese & Speyer. As for the combinations of determiner and noun, Wiese & Speyer consider these words to be phonological phrase mates just as they form a syntactic unit together. As phonological phrase mates, the shape of the determiner may affect the prosodic shape of the alternating noun, according to Wiese & Speyer's parallelism proposal. The assumed phonological phrasing, however, doesn't go uncontested. Lahiri and Plank (2010) observe that (Dutch and English) speakers regularly choose a phrasing that maximizes the alternation of strong and weak syllables in a trochaic fashion. This, as Lahiri and Plank (2010) show, gives rise to prevalent mismatches between syntactic structure and prosodic phrasing. In German, like in Dutch or English, determiners (and other function words) tend to be weak monosyllables while nouns (and other lexical words) tend to be strong monosyllables or trochees (Eisenberg, 1991). Following Lahiri & Plank, a phrase break is best placed before the strong noun with the weak determiner being adjoined to a preceding strong syllable (or remaining unparsed), thus establishing the preferred trochaic (and sometimes: dactylic) rhythm. The phrasing in (3) is one in which feet may straddle word boundaries. Correspondingly, the syntactic constituent Det-N ('ne *Flasche* in (3)) is broken up into two prosodic phrases.

- (3) (Hol mir) (mal 'ne) (Flasche) (Bier)  
bring me once a bottle beer  
*get me a bottle of beer*

Following Lahiri and Plank (2010), determiners (and function words in general) are especially prone to reduction in this weak position that they are assigned to in phrasal prosody. Accordingly, determiner and noun are prosodified in a strictly asymmetric way, and, consequently, prosodic parallelism can hardly be made responsible for the facts regarding schwa-zero alternation on the noun, as reported in Wiese & Speyer. However, even under the trochaic phrasing assumed by Lahiri & Plank, there is a case for prosodic parallelism to be made. Crucially, under this proposal, parallelism may affect the prosodic shape of the function word rather than the shape of the noun. That is, determiners in prosodically weak positions are encliticized to the preceding strong syllable and thus reduced (cf. reduced determiner 'ne in (3)), thereby creating a sequence of similar (parallel) trochees at the cost of syntax-prosody-isomorphism.

In Germanic, the preference for trochaic phrasing beyond the word is so strong that it evokes striking 'slips of the ear', which result from the perceptual separation of strong syllables from preceding weak ones and the encliticization of weak syllables to preceding strong ones. Numerous studies by Cutler and colleagues (Cutler,

2012) provide evidence for this rhythmic segmentation strategy in English and Dutch.<sup>2</sup> Consider, in this respect, a German speaking child’s reference to the toy character *Bob der Baumeister* (Eng.: ‘Bob the builder’, with *der Baumeister* functioning as the appositive attribute to the proper name): Whenever the 3 year old is asked for the name of the character, the consistent answer, which defies proper alignment of syntax and prosody, is the optimal disyllabic trochee [’bɔp.də] – most likely a merger of the proper name and the following determiner.

To summarize, it appears that feet are built in context, and that function words tend to lose their status as foot licensors in connected speech (if they ever had this status). In other words, the strong propensity for trochaic rhythm regularly leads to i) the reduction of determiners to weak syllables and ii) the prosodic separation of determiner and noun.

### 3 Conclusion: Prosodic parallelism and the role of prosody in spoken and written language

The previous discussion casts doubt on two central premises of Wiese & Speyer’s account, namely the presumed prosodic structure of function words and the applied phonological phrasing. If, as I suppose, these premises do not hold, parallelism cannot explain the apparent prosodic correspondence of determiner and noun that Wiese & Speyer found in the written corpora.

Anticipating (some of) the problems for their case, Wiese & Speyer explicitly state that written language (their field of examination) does not represent actual speech but the ‘intended’, i.e. unreduced pronunciation. It is certainly the case that the oral rendition of written language (i.e. read speech) usually contains far fewer reductions than spontaneous speech. Also, since, in writing, all orthographic words, irrespective of their syntactic role, are separated by blanks, one may assign each of them a similar (prosodic) status, with the blanks preventing cliticization, as it were. At the same time, reading research suggests that the implicit prosodic representation of the text in silent reading is essentially speech-like, even entailing fine phonetic detail (Ashby and Martin, 2008; Chafe, 1988; Filik and Barber, 2011), but see de Ruiter (2015) who suggests that read speech and spontaneous speech have very different prosodic characteristics.

In any case, the specific role of prosody in written language and how it relates to speech prosody is only beginning to be explored (Breen, 2014, for a review on the role of ‘implicit prosody’ in reading). It is by no means clear how – in the absence of definite cues for phonological boundaries – written language is

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<sup>2</sup>My own research on misperceived song lyrics (Kentner, 2015b) strongly confirms the same tendency for German.

phrased phonologically. Worse still, given the un(der)specified prosodic structure of the written code, it is likely that readers apply a prosodic parse that differs from the one that the writer had in mind (provided that both readers and writers indeed apply prosodic phrasing to written language). Given this uncertainty, one cannot know which of the many conceivable prosodic representations is affected by prosodic parallelism and how.

Assuming that Wiese & Speyer's examination of schwa-zero alternations in written corpora reveals the workings of prosodic parallelism (as suggested by the authors), their results point to a fundamental difference concerning the role of prosody in written and spoken language. More concretely, the discrepancy between oral (speech) and written language leads to an apparently dialectical situation in relation to prosodic parallelism: On the one hand, effects of prosodic parallelism are seemingly observable in the written modality, which does not explicitly encode prosody. On the other hand, effects of this prosodic constraint remain largely undetectable because of regular reductions in the spoken modality, in spite of its rich prosodic code.

To conclude, even if prosodic parallelism is real in written language, we cannot know whether and how it affects spoken language.

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