

Funke, R. (2023). Relating the processing of syntactic spellings to linguistic structure. Gender agreement in French and German and its orthographic expression. Contribution to the workshop *Syntax meets orthography*, Université du Luxembourg, July 6-7, 2023.

## Relating the processing of syntactic spellings to linguistic structure.

### Gender agreement in French and German and its orthographic expression

(Contribution to the workshop *Syntax meets orthography*, Université du Luxembourg, July 6-7, 2023)

#### 1. Overview

Comparing syntactic spellings in diverse orthographies has recently become a topic of growing interest in educational studies (e.g., Funke 2018, 2019, Weth 2020). These studies focused on descriptive interlinguistic comparisons. A natural next step would be to ask whether differences in the way how learners process such spellings relate to differences in how the spellings are based in structural features of the languages in question. This is the project I will follow here with respect to a special case, adjectival gender in French and German and its role in syntactic spellings.

In French as well as in German adjectives, gender (and number) is an inflectional feature, not an inherent one. Gender (and number) agreement is, in both languages, a relation which may hold between units belonging to the same noun phrase (NP). This means that adnominal adjectives agree in gender (and number). The noun can be claimed to be the head (or, more specifically, the ‘gender-number-head’) of the NP because in nouns, as opposed to adjectives, gender (and, occasionally, number) may be an inherent feature. In French, adjective phrases outside noun phrases may agree in gender (and number) with noun phrases too.

In both languages, adjectival agreement normally finds an orthographic expression in the spelling of inflectional morphemes. A specialty of the French orthography is that inflection gets represented in writing even if it is absent in speech. This phenomenon is sometimes called ‘silent morphology’. I will stick to this term for convenience though, conceptually, it is somewhat dubious. Silent morphology implies that, to arrive at a correct spelling, writers have to observe syntactic features in addition to phonological ones. In German, the representation of adjectival inflection follows its representation in speech. I will argue that, nevertheless, adjectival inflection in German is related to a spelling determined by syntax which is realized in nouns. This is the capitalization of nouns. Capitalization occurs depending on syntactic features without being systematically founded in phonology and, therefore, makes it necessary for writers to observe syntactic features in addition to phonological ones. Cases where writers must determine spellings based on syntactic considerations without phonological support may be called ‘syntactic spellings’ (cf. Weth 2020). So, both languages, French and German, have in common that they feature cases of syntactic spellings. If my argument is correct, both cases are tightly related to adjectival inflection. As seen from the comparison of French and German, they are related more specifically to adjectival gender inflection than to adjectival number inflection because adjectival gender inflection is where linguistic peculiarities come into play.

As experience shows, syntactic spellings are major hurdles for learners (and for many people who are expected to have completed literalization) in French (see, e.g., Gunnarson & Largy 2010, Manesse & Cogis 2007, Totereau et al 2013) as well as in German (see, e.g., Betzel 2015, Scheele 2006, Schreiner 1983). This makes these spellings a topic which has attracted a growing interest in the past years.

I will start with a comparison of adjectival gender agreement in French and in German at the linguistic level. Based on this, I will advance the hypothesis that the linguistic differences found

between both languages are related to performance differences at the level of processing syntactic spellings as observed in expert writers. So, the project is to make connections between the linguistic (or structural) and the processing (or cognitive) domain. Note that my considerations will be conceptual. They serve the purpose of generating empirically testable hypotheses rooted in theory. I will not present new data.

## 2. Adjectival gender at three levels

### 2.1 Phonological level

In spoken French as well as in spoken German, adjectival agreement may get marked by phonological modifications on the final syllable(s) of the word's form. At the morphological level, these alternations get analyzed as suffixation.

So, it is important to consider syllabic structure in the context given. Pike (1945) established a distinction between two types of rhythmic patterns underlying speech which he called syllable-timed pattern and stress-timed pattern. French has traditionally been described as a syllable-timed language (Abercrombie 1967). In languages following a syllable-timed pattern, syllables get allocated roughly equidistant time slots. German has been said to feature a stress-timed pattern (Kohler 1977). In languages following a stress-timed pattern, time slots allocated to the domain of stress peaks, not to syllables, are equidistant.

Pike's distinction has not gone uncontested, mainly because it turned out to be hard to confirm it by measures of the phonetic signal (for an overview, see Auer & Uhmann 1988). Nevertheless, the distinction seems to be needed to describe obvious differences between languages (Nespor, Shukla & Mehler, 2011). I will take the rhythmic patterns grasped by it as articulatory features, i.e. as features of the 'phonetic gesture' sensu Liberman (Liberman & Mattingly 1985) rather than features of phonetic signals. Syllables as articulatory units have traditionally been compared to steps. In a syllable-timed language, you have to exert control over the whole step, including its landing phase, i.e. the articulatory movement which completes the syllable. In a stress-timed language, the steps may take the shape of ballistic movements (Maas 2006). These are movements where the start is controlled but not the landing. From this viewpoint, one might compare syllabic articulation in French to the steps of a rope walker, and in German to the steps of a triple jumper.

In a stress-timed language, more than one syllable (or, to stick to the metaphor, step) may be allocated to one slot. They are dominated by the stressed syllable. The unstressed syllables allocated to this slot get degraded in prominence as compared to the stressed syllable. They have, as it were, to make do with the room left to them by the stressed syllable. As, in German, stress by default goes to lexical units, this means that syllables carrying inflection markers are realized by what Maas (2006) called 'reduction syllables'. These are syllables reduced in length as well as in sonority. In French, inflectional features must get realized (if any) in what Maas (2006) calls 'full syllables'. To illustrate this on adjectival gender inflection, consider the adjective meaning 'sinful' in French and in German. The French word is *pêcheur* in the masculine and *pêcheresse* in the feminine form. Adjectival gender gets marked in the form's final syllable, represented by *eur* [øR] resp. *esse* [ɛs]. These are full syllables bearing the same weight as the syllable representing the adjective's root. The German word is *sündiger* in the masculine and *sündige* in the feminine form. The syllables representing adjectival gender are *er* [a] resp. *e* [ə]. These are units which, by their nature, cannot get stressed and do not allow final consonants to be realized as sonorants.

Being attached to a stressed syllable offers syllables carrying adjectival inflection a niche to survive. So, in German orthography, no such thing is assumed to exist as the French 'silent' inflectional

markers even if inflectional suffixes which one might expect to appear are actually omitted in speech on a regular basis. In spoken French, syllables carrying inflectional suffixes will not attach to another syllable because doing so would interfere with the syllable-timed pattern. As a consequence, adjectival gender markers either appear in autonomous full syllables, or they do not appear at all.

## 2.2 Morphological level

Table 1 shows how gender is marked by suffixes in ‘personal’ nouns and in adjectives.

nouns			
French		German	
masc	fem	masc	fem
servant	servante	Diener	Dienerin
acteur	actrice	Schauspieler	Schauspielerin
baron	barone	Baron	Baronin, Baronesse
chien	chienne	Hund	Hündin
adjectives			
French		German	
masc	fem	masc	fem
grand	grande	großer	große
tentateur	tentatrice	verlockender	verlockende
certain	certaine	sicherer	sichere
ancien	ancienne	alter	alte

Table 1. *Nominal and adjectival gender in French and German.*

As for nouns, French and German behave in a quite similar manner. The feminine forms are derived from the masculine ones and marked by suffixation. Things are different in adjectival gender. In French adjectives, feminine forms often get marked by using the same suffixes as employed in nouns. In German, the inflection suffixes marking adjectival gender are completely different from the derivational suffixes marking nominal gender. Also, adjectival feminine forms are not derived from masculine ones.

These observations suggest that, in French, suffixes marking adjectival gender carry the same conceptual ‘content’ as they do in nouns. The conceptual ‘content’ of gender is quite evident in ‘personal’ nouns, because in them, gender as a rule, aligns with sex. To some degree, the ‘content’ becomes apparent in ‘impersonal’ nouns too as can be seen from the fact that, in both languages, when nouns range in hierarchical taxonomies, gender is, as a rule, preserved when one turns from a word to a hyperonym of it. In German, there is no reason to assume that adjectival gender shares any conceptual ‘content’ with noun gender. It is conceptually void and has a purely syntactic function.

There are additional interlinguistic differences related to the fact that noun and adjectival gender get marked by the same suffixes in French but by different suffixes in German. First, nouns functioning as adjectives do exist in French (as they do in English), but not in German (see, e.g., the French adjective

*pêcheur*). The reason is that nouns lack adjectival inflection which is required in German for a word to function as an adjective.

Second, in French, gender and number are independent dimensions, i.e. they cross-classify. This is illustrated in Table 2.

Adjectival gender and number in French		
	masc	fem
sing	beau/bel	belle
pl	beaux	belles

Table 2. Gender and number cross-classify in French.

In German, as opposed to nominal gender and number, adjectival number and gender do not cross-classify because in the plural, the gender distinction is absent. So, both dimensions are dependent, i.e. not separable. An adequate representation of the adjectival paradigm for German is displayed in Table 3.

Adjectival gender and number in German			
masc	fem	neut	pl
schöner	schöne	schönes	schöne

Table 3. Gender and number do not cross-classify in German.

The dependence of adjectival gender and number led some German linguists to assume that, in adjectives, gender and number are realizations of one unitary gender-number-category with the features {masc, fem, neut, pl} (see Müller 2002, Wunderlich 1997). This mirrors the purely syntactic character of adjectival gender and number in German. A unitary category comprising conceptually heterogeneous features as is found in Table 3 may not be ascribed conceptual content.

Of course, it is tempting to relate this morphological difference to the phonological difference regarding inflection suffixes. The obstinate placing of inflection suffixes in reduction syllables in German makes it impossible to align them with derivational suffixes which are, as a rule, not realized by reduction syllables but may generally be associated with conceptual 'content'.

## 2.3 Syntactic level

Example 1, presenting a sentence in French first and in German second, with English translation added, comprises three adjectives, each marked by underlining.

- (1) *Nous avons constaté que la petite maison voisine était inoccupée.*  
*Wir stellten fest, dass das kleine benachbarte Haus leer war.*  
 [We found that the small house nearby was vacant]

Two main differences may be observed.

First, in French, adjectives functioning as sentential predicates (or 'attribut du sujet', using the term common in French descriptive grammar, see Grevisse & Goose 1995) agree with the subject noun phrase for gender and number. Such adjectives appear in adjective phrases outside the noun phrase.

The word *inoccupée* represents this case in (1). In German, such adjectives, represented in (1) by the word *leer*, do not get inflected.

Note that an interlinguistic difference emerges in adjectives only here, not in nouns appearing in the same position. To illustrate, in French one would say *Ma fille est une étudiante*. Also, in German the usual expression would be *Meine Tochter ist eine Studentin*, not *Meine Tochter ist Student*. To be sure, the alignment of gender in German in this case results from a convention rather than from a syntactic constraint. This can be seen from the fact that it does not transfer to ‘impersonal’ nouns where a true inflectional agreement of two NPs would be at play, not an alignment in gender of two nouns. This, however, seems to be the case in French too. E.g., you would say *Je suis une étudiante* if you are female but *Je suis un étudiant* if you are male. This is not an inflectional agreement but a semantic alignment because the word *je* does not feature inflectional gender. So, at the syntactic level, both languages compare in a way similar to the phonological and the morphological level: French and German resemble each other with respect to noun gender, but they differ with respect to adjectival gender.

Second, French adnominal adjectives (called ‘épithète’ in descriptive grammar, see Grevisse & Goose 1995) may be preponed or postponed to the noun. In both cases, they agree with the noun for gender and number. In (1), this applies to *petite* on the one hand, and *voisine* on the other hand. In German, adnominal adjectives agree with the noun for number and gender; however, they do so only if preponed to the noun. That is, the adjective’s being inflected marks its position within the noun phrase’s centre segment.<sup>1</sup> This applies to *kleine* and *benachbarte* in (1).

As for the syntactic level, one might formulate the result as follows: In French, adjectival gender is a global feature, i.e. a feature which is available across the whole sentence. In German, adjectival gender is a local feature. It has, as it were, a life only as long as the adjective functions within the boundaries of a noun phrase as delimited by the noun’s appearance.

## 2.4 Taking facts together

Taking the phonological, morphological and the syntactic facts together, this leads to the following hypothesis (1) which makes a connection between them.

- (1) Adjectival gender, in French, is globally available for agreement because it may be associated with some conceptual ‘content’. By the same item, adjectival gender in German is available for agreement only locally because it is void of conceptual ‘content’.

Hypothesis (1) is a key to link the structural facts to the processing facts (see section 4 below). It is substantiated by the observation that, at all levels, no interlinguistic difference is observed with respect noun gender. This mirrors the fact that noun gender seems to feature some conceptual ‘content’ in both languages.

## 3. The orthographic expression of adjectival gender in syntactic spellings

In French, adjectival inflection is involved in the most prominent case of syntactic spelling in that language, namely the orthographic marking of so called ‘silent morphology’. As far as adjectives are concerned, this mostly applies to number agreement (*le petit chien – les petits chiens*). In some cases, although less systematically, gender agreement is at stake too (*le château caduc – la maison caduque*).

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<sup>1</sup> There are rare and extremely restrained cases of idiomatic or poetic use where they appear postnominally. Crucially, if so, they do not get inflected.

In German, one may wonder whether adjectival inflection is related to syntactic spelling at all. It is represented in spelling following a phonological route. Its representation may even follow a route which seems to be a purely phonetic one – which is strange enough. For instance, you might spell <ein besseres Haus> ('a better house') or, alternatively, <ein bessres Haus>. This runs counter to a general principle claimed to be valid in German orthography (see, e.g. Furhop 2006, Nerius 2000), viz. the principle that morphemes should always be represented in the same orthographic form without regard how they are realized phonologically. Nevertheless, the official German regulations do not disapprove such variation (Rat für deutsche Rechtschreibung 2017).

However, one may argue that adjectival gender (and number) agreement is the main determinant of a syntactic spelling realized in German elsewhere, viz. the capitalization of nouns featuring as heads of NPs. Recall that in German, adjectival agreement is restricted to the segment of the noun phrase which is delimited by the noun position. The noun thus is the boundary where the 'life' of adjectival gender (and number) expires. It is this boundary which gets marked by capitalization.

#### 4. Processing of syntactic spellings

By 'processing', I mean, in the context given, skilled processing. Connecting processing of syntactic spellings to structural facts may be based on hypothesis (2).

(2) Syntactic spellings related to adjectival inflection ...

- a. ... require maintenance of sentence-level information in French, but phrase level information in German;
- b. ... may make it necessary to deliberately discard consideration of phonology in French which they do not in German.

Crucially, one may assume that the first difference impacts on memory processes employed in syntactical spelling (cf. Fayol et al 1999, 1994, Fayol & Jaffré 2014 for French; Funke & Sieger 2009, 2012 for German). If, when writing German, you have to decide whether to capitalize or not, you can make your decision without delay as soon as a noun appears. As a consequence, you can draw on your immediate memory of noun phrase inflection. In French, marking adjectival agreement requires that you maintain memory of gender (and number) features across the whole sentence. This may make it necessary to restore syntactic information which has been present in your mind originally but faded.<sup>2</sup>

Also, in French, if, in this case, you revert to phonology-based memory aids, this will mislead you because this lays a false trail to spelling. In German, reiterating an adjective's phonological form will not interfere with capitalization.

#### 5. Conclusion and prospects for future research

To sum up: When considering syntactic spellings, one has to deal with linguistic structures on the one hand, and with cognitive processes on the other hand. Comparing syntactic spellings in different languages offers an opportunity to relate structures and processes to one another. As for the process level, hypothesis (2) just refers to skilled processing. However, arriving at hypotheses about

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<sup>2</sup> The formulation used in (2.3) that, in German, adjectival inflection 'loses its life' with the appearance of the noun is a metaphor when considered from a structure-focused point of view. From a process-focused view, it describes an immediate reality. For with the appearance of the noun, adjectival gender ceases to be active and virulent in memory.

processes of learning and teaching syntactic spellings which connect cognitive processes with linguistic structures would be the ultimate goal.

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