

From letter to sound

New perspectives on writing systems

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Table of contents

Introduction: From letter to sound: New perspectives on writing systems <i>Beatrice Primus and Martin Neef</i>	133–138
In search of the perfect orthography <i>Richard L. Venezky</i>	139–163
Word-initial entropy in five languages: Letter to sound, and sound to letter <i>Susanne R. Borgwaldt, Frauke M. Hellwig and Annette M.B. de Groot</i>	165–184
The apostrophe: A neglected and misunderstood reading aid <i>Daniel Buncic</i>	185–204
The relation of vowel letters to phonological syllables in English and German <i>Martin Neef</i>	205–234
A featural analysis of the Modern Roman Alphabet <i>Beatrice Primus</i>	235–274
Do symmetrical letter pairs affect readability? A cross-linguistic examination of writing systems with specific reference to the runes <i>Alexandra Wiebelt</i>	275–303
How to optimize orthography <i>Richard Wiese</i>	305–331
Contents of Volume 7	333–334

The apostrophe

A neglected and misunderstood reading aid

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The paper provides a new analysis of the apostrophe in various languages which is less redundant and complies better with linguistic intuition than traditional definitions.

The apostrophe does not mark the *omission* of letters, as traditionally assumed (English *it's*, German *auf'm* 'on the', French *l'ami* 'the friend'), but indicates important *morpheme boundaries* wherever this is necessary for certain reasons. Such an indication of a morpheme boundary can be necessitated by several factors, e.g. the omission of letters (English *it's*, German *auf'm*, French *l'ami*), proper names (Turkish *Ankara'da* 'in Ankara', English *John's*), or graphical code-switching (English *two l's*, Russian *laptop'ov* 'laptop, gen. pl.').

This explanation covers even most violations of current orthographic norms, e.g. German *Häus'chen* 'small house', and it has no exceptions whatsoever in formal texts. (English *isn't*, German *'nauf* 'up', French *p'tit* 'small' are mere 'transcripts' of colloquial speech.)

0. Introduction.

0.1. The road from letter to sound is not always straight. Sometimes there arise ambiguities as to which sound to choose. Examples of this are homographs:

- (1) a. English ⟨tear⟩ ['tɛə] or ['tɛə], ⟨minute⟩ ['mɪnɪt] or [mɪn'ju:t]
- b. German ⟨modern⟩ [mo'dɛrn] 'modern' or [mo:dɛn] 'to rod'
- (2) a. English ⟨read⟩ ['ri:d] or ['rɛd]
- b. German ⟨kosten⟩ ['kɔstən] 'to cost' or ['kɔ:stən] '(they) cuddled'
- (3) German ⟨Andreas⟩ [an'dre:as] 'Andrew' or [an'drɛ:as] 'Andrea's'

The correct pronunciation of these written words is impossible without a context or any other information (e.g. the word class in (1), tense in (2), or the sex

of the person in (3)). Apart from such peculiar but – admittedly – relatively few examples of whole homographic words, there are lots of situations where pronunciation rules render an ambiguous output of sounds from a certain input of letters (e.g. English ⟨ea⟩, German single vowels before ⟨st⟩, etc.; for more detail on the problem of ambiguous vowel letter sequences see Neef 2003). This paper will try to shed some light on a written mark that can provide some morphological information needed to simplify reading (cf. Venezky, this volume, on the word superiority effect) by disambiguating the letter string: the apostrophe.

0.2. The title of this article does not refer to a particular language, and indeed it will treat the functions of the apostrophe across languages and across writing systems¹, though English and German are at the centre of interest. A comparative approach seems to be more appropriate with a *syngrapheme* than it would be with letters: For example, Günther's (1988: 68) inventory of German letters

(4) a b c d e f g h i j k l m n o p q r s t u v w x y z ä ö ü ß

definitely identifies German (and even differs from the inventory of the Swiss variety of Standard German, which does not include the last one of these letters). In contrast to this, the inventory of syngraphemes of any European language is the same as Günther's list of German 'auxiliary symbols' („Hilfszeichen“, *ibid.*) — though with slight deviations e.g. in Spanish and Greek — and, with some graphical differences, also for Arabic and Hebrew, and even for non-alphabetic writing systems such as the Chinese and Japanese ones:

(5) ! ? . () - " : ; ,

0.3. However, what is missing in this list of 'auxiliary symbols' is the apostrophe. This mistake is symptomatic of the attention paid so far to this syngrapheme.²

Apart from being neglected by linguists, the apostrophe is also commonly misunderstood, as the following quotations from definitions of *apostrophe* in popular dictionaries show:

- (6) a. a mark (') showing the omission of a letter or letters in a word, also a sign of the modern Eng. genitive or possessive case — orig. a mere mark of the dropping of the letter *e* in writing.³ (Davidson 1901: s.v. *apostrophe*)
 b. the sign ' used to show omission of letter(s) or number(s) (as in *can't*, *I'm*, '05, for *cannot*, *I am*, *1905*), for the possessive (as in *boy's*, *boys'*), and for the plurals of letters (as in *There are two l's in 'Bell'*). (Hornby 1987: s.v. *apostrophe*)

- (7) a. Zeichen für einen weggelassenen Vokal (bes. e), z. B. „er ist's“ statt: „er ist es“ (Wahrig 1986: s.v. *Apostroph*)
 Translation: symbol for a dropped vowel (especially *e*), e.g. *er ist's* instead of *er ist es* 'it is him'
 b. Auslassungszeichen, z. B. in „wen'ge“ (Duden 2000: s.v. *Apostroph*)
 Translation: omission mark, e.g. in *wen'ge* [for *wenige* 'few']

Obviously, all these definitions regard the indication of omitted material as the primary function of the apostrophe, and any other functions the apostrophe might have are either treated as secondary functions for special cases or not mentioned at all. In German, for example, the substitution of omitted material is viewed as the 'one and only' legitimate function of the apostrophe, and on the basis of this assumption an apostrophe before a possessive *-s* (as in English) is fervently argued to be wrong.

0.4. However, I will show that the function of the apostrophe is the indication of morpheme boundaries wherever this is necessary for certain reasons. This conforms to the odd cases of the English possessive or plural marker and to many other cases in other languages that cannot be treated as instances of elision. The substitution of omitted letters will be shown to be at least of a very minor importance. In the following I am going to provide four arguments for this explanation:

1. The morphological function of the apostrophe is the core function in all orthographies, and the only function in many.
2. The morphological function of the apostrophe seems to accord to linguistic intuition, as it is often used in contrast to official orthographic rules.
3. The cases treated so far as instances of elision can always be re-interpreted as morphological apostrophes in formal texts. Apostrophes that have no morphological function do not occur in completely normative texts; instead they are used exclusively as a stylistic variation for representing oral speech in writing.
4. Historically, the apostrophe has had a morphological function from the very beginning.

0.5. Before we can consider these arguments, we will have to exclude apostrophes that are not *syngraphemes* in any way, namely those that function as a quasi-letter (8 a), a diacritic (8 b), or an abbreviation⁴ mark (8 c):

- (8) a. Ukrainian ⟨'⟩ for [j]: ⟨п'ять⟩ ['pjatʲ] 'five'
 Turkish ⟨'⟩ for [ʔ]: ⟨mer'i⟩ [mɛr'ʔɪ] 'valid, in force'

- b. Czech ⟨d' Ď⟩ for [dʰ], ⟨t' Ě⟩ for [tʰ]
 Slovak ⟨d' Ď⟩ for [dʰ], ⟨t' Ě⟩ for [tʰ], ⟨l' L⟩ for [lʰ]
 Italian ⟨'⟩ replaces an accent with capitals: ⟨CITTA'⟩ for ⟨citta⟩ 'town'
 Ancient Greek ⟨'⟩ indicates numbers: ⟨α'⟩ '1', ⟨β'⟩ '2', ⟨γ'⟩ '3', etc.
- c. English informal ⟨sec'y⟩ for *secretary*, ⟨ass'n⟩ for *association*
 German ⟨M' Gladbach⟩ for *Mönchengladbach*, ⟨D' dorf⟩ for *Düsseldorf*
 Hebrew ⟨' ' ' ... ' '⟩ (PRWP') 'prof. (professor)', ⟨• ' ' ' ~ Tñ
 (ARH'B)⟩ 'USA'

1. Evidence from various languages

There are several European languages in which all apostrophes can be explained by their morphological function.⁵ Of course not all morpheme boundaries have to be indicated graphically. Some conditions under which a graphical specification of a morpheme boundary is helpful are proper names, graphical code-switching, zero morphs, and cliticization.

1.1. Proper names

The principle of pattern constancy seems to be especially important with proper names (cf. Gallmann 1989: 105). In Turkish an apostrophe is placed before case endings of all proper names (9 a), and before affixes in foreign proper names (9 b). The English possessive *-s* is used predominantly⁶ with personal names (10).

- (9) a. Turkish ⟨Ankara'dan⟩ 'from Ankara', ⟨Erdoğan'a⟩ 'to Erdoğan'
 b. Turkish ⟨Lille'li⟩ 'inhabitant of Lille' (but: ⟨Bursali⟩ 'inhabitant of Bursa')
 (10) English ⟨Jack's wife⟩, ⟨Jane's husband⟩ (but also: ⟨my father's house⟩)

In German this use of the apostrophe, which clearly contradicts the traditional claim that the apostrophe can have only substituting function, has finally been sanctioned by the 1998 orthography reform: After decades of widespread, but 'wrong' use, the apostrophe may now be used in order to make the base form of a proper name clearer when the adjectival suffix *-sch* or the genitive ending *-s* is appended:

- (11) a. German ⟨die Grimm'schen Märchen⟩ 'the Grimms' fairy tales'
 b. German ⟨Andrea's Blumenecke⟩ 'Andrea's flower corner'

In (11 a), *Grimm'sch* is an adjective of the type *Elizabethan* or *Wilsonian*. The old spelling (until 1998/2005) used to be †⟨die Grimmschen Märchen⟩ without the apostrophe, but with compulsory capitalization of the adjective as a proper name. However, such adjectives were only capitalized when formed with the suffix *-sch*, whereas other words of this type were spelled like normal adjectives, e.g. ⟨wilhelminisch⟩ 'Wilhelmian', ⟨petrinisch⟩ 'Petrine'. In the new orthography the word type †*Grimmsch* has been integrated into this group, and can consequently also be spelled with a small letter: ⟨die grimmschen Märchen⟩. If you want to stress the fact that the first part of the word represents a proper name you have to separate it from the suffix by means of an apostrophe: ⟨Grimm'sch⟩.

In (11 b) the problem is that *Andreas* is not only the genitive of the female name *Andrea*, but also a male first name ('Andrew') and a surname ('Andrews'). Though 'Andrew's flower corner' would have to be spelled ⟨Andreas' Blumen-ecke⟩, ⟨Andreas Blumenecke⟩ 'Andrea's flower corner' on a shop window might as well be read as 'Andrew – flower corner' or 'Flower corner Andrews'.

1.2. Graphical code-switching

Graphical code-switching means that the pronunciation rules according to which a text has to be read change within a word. This is the case with foreign words that are combined with native morphs as in (12) and with letters that have to be spelled aloud, i.e. pronounced as words, as in (13) (cf. Gallmann 1989: 105).⁷ The condition for the apostrophe in Polish and Finnish is that the final letter of the stem is not pronounced. (In Finnish this applies only to stems ending in a consonant letter but a vowel phoneme.)

- (12) a. Russian ⟨laptop⟩, unless transcribed as ⟨лэптоп (lěptop)⟩,
 gen. pl. ⟨laptop'ov (laptop'ov)⟩, or ⟨лэптопов (lěptopov)⟩
 (Otherwise in *⟨laptopov⟩ any of the three letters ⟨op⟩ might be read as either Cyrillic or Latin; only ⟨l⟩, ⟨t⟩ and ⟨v⟩ are unambiguous.)
 b. Polish ⟨Harry⟩, gen. sg. ⟨Harry'ego⟩, pronounced without the ⟨y⟩:
 [xa'regɔ] (but loc./instr. sg. ⟨Harrym⟩ pronounced with the ⟨y⟩: [ˈxarim]);
 Polish ⟨Descartes⟩, gen. sg. ⟨Descartes'a⟩ [de'karta]
 c. Finnish ⟨Bordeaux'ssa⟩ [bordo:s:a] 'in Bordeaux',
 ⟨Versailles'ssa⟩ [versai:s:a] 'in Versailles'
- (13) English ⟨the l's⟩: the ⟨l⟩ has to be read as its name [ɛl], the ⟨s⟩ as the sound [z] (alternative spelling, preferable in print: ⟨the ls⟩)

1.3. Zero morphs

Important zero morphs can be indicated in writing by placing an apostrophe next to a word boundary (indicated by a blank), thus implying that there has to be another morpheme between these two boundaries:

- (14) a. German (Das Wasser rauscht', das Wasser schwoll...) 'The waters swept, the waters swelled' (Goethe, "Der Fischer", the standard example)
 b. German (Günter Grass' *Blechtrommel*) 'Günter Grass' *Tin Drum*'
 c. English (Max' father), (the Smiths' car), (Athens' townhall)

Gallmann (1989: 104) makes a distinction between cases like (14 bc), which are the only possible spelling, and cases like (14 a), which are conditioned by metrical reasons and where there is a synonymous spelling without the apostrophe (but with a different pronunciation; in this case *rauschte* 'swept'). Concerning the function of the apostrophe this does not make any difference; in both cases the apostrophe marks the boundary of a zero morph.

1.4. Cliticization

The apostrophe can be used to mark word boundaries that are not indicated by white space, because two words are melted into one, usually in connection with the elision of a vowel, so that one of the words becomes a clitic:

- (15) a. English informal (it's) for *it is*, (we're) for *we are*, (let's) for *let us*, (rock'n'roll) for *rock and roll*
 b. German very informal (auf'm) for *auf dem* 'on the', (in'n) for *in den* 'in the', (Bist du's?) for *Bist du es?* 'Is it you?'
 (16) a. French (l'hôtel) (for **le hôtel*) 'the hotel', (s'il) (for **si il*) 'if he', (j'ai) (for **je ai*) 'I have', nowadays usually (grand-mère) 'grandmother' for older (grand)mère (< [†]*grande mère*)
 b. Italian (l'albero) (for **lo albero*) 'the tree', (d'ogni) for *di ogni* 'of all'

Gallmann (1989: 102 f.) assumes that in the German examples in (15 b) the apostrophe marks a violation of orthographic norms. From a comparative point of view, however, these cases are obviously parallel to those in (16), where they are the only correct spellings. Note that the role of the morphological boundary in these cases, though not reflected in grammar books, is actually felt by writers of these languages, and some of them are conscious of this, e.g. Sidney F. Whitaker (1989: 42): "Coming to written English from French, I have

always hesitated in joining words and having to mark the elision later than the join – *isn't* and *haven't* – rather than at the boundary."

2. Linguistic intuition despite norms

In a growing number of norm violations especially in German the apostrophe is used as a marker of morpheme boundaries (and in many cases with good reason!) in places where there is clearly no omission. This shows that the definition of the German apostrophe as an exclusive marker of elision contradicts the intuition of the 'naïve native writer'. All the following examples are taken from Fuchs (1997) and Oelwein (1997), two websites dedicated to the collection of instances of 'incorrect' apostrophe usage in public spaces (i.e. on posters, shop windows, the Internet, etc.). All the examples listed there are documented by photographs. Unfortunately, it is beyond the scope of this article to provide a quantitative corpus analysis. However, the mere existence of a public discussion about these 'mistakes', of which the two websites cited are only examples, would seem to indicate that these violations of the norm are no rare phenomenon.

One reason to use a non-standard apostrophe in German is to avoid letter strings that have more than one phonetic reading:

- (17) a. (Heiderös'chen) 'heath-rose', (Dornrös'chen) 'Sleeping Beauty', (Schlöss'chen) 'little castle':
 (sch) = [sç], not [ʃ] as in (löschen) 'extinguish'
 b. (Langlauf Ski'er) for (Langlaufskier) 'cross-country skis':
 (ier) = [i:ɐ], not [iɛ] as in (schieer) 'sheer'

Another problem are unstressed tense ('long') vowels before a word-final single consonant (usually ⟨s⟩). As words like (Kandis) 'sugar-candy', (Kosmos) 'cosmos' or (Globus) 'globe' with lax ('short') vowels show, this spelling is ambiguous as to the pronunciation of the vowel. However, a morpheme boundary before the word-final consonant is a sufficient condition for the tense pronunciation of the morpheme-final vowel,⁸ and hence it is often indicated in non-normative spelling:

- (18) a. (Tortilla's), (Pizza's), (Kamera's), (Euro's), (Video's), (Info's), (Foto's)
 b. native words: (Kita's) 'all-day kindergartens', (Mami's) 'mommies'

A special problem is posed by the genitive or plural forms of English loanwords ending in ⟨y⟩ in the nominative singular. In the English original the spelling

⟨ys⟩ in the plural is avoided, too, and ⟨y⟩ is replaced by ⟨ie⟩. The unofficial German way out is the apostrophe to mark the boundary between the word stem and the ending.

- (19) a. correct German plural: ⟨Ladys⟩ ⟨Partys⟩ ⟨Fiftys⟩ ⟨Teddys⟩
 b. correct English plural: ⟨ladies⟩ ⟨parties⟩ ⟨fifties⟩ ⟨teddies⟩
 c. occasional German spelling: ⟨Lady's⟩ ⟨Party's⟩ ⟨Fifty's⟩ ⟨Teddy's⟩

The same applies to the pseudo-anglicism ⟨Handy⟩ 'mobile phone', which is often spelled ⟨Handy's⟩ in the plural.

A non-normative apostrophe that is very widespread on the Internet helps to disambiguate two homographs:

- (20) ⟨Link's⟩ 'links (in a hypertext)' vs. ⟨links⟩ 'left'

The following examples show an analytic tendency in complex words (all of which are usually written as one word), where a blank or a hyphen marks the composition boundary, while the apostrophe marks inflexion (21 a) and linking elements (21 bc):

- (21) a. ⟨Gardinen-Rollo's⟩ for ⟨Gardinenrollos⟩ 'roll-top curtains'
 b. ⟨Bahnhof's Imbiß⟩ for ⟨Bahnhofsimbiß⟩ 'station snackbar',
 ⟨Dienstleistung's Service⟩ for ⟨Dienstleistungsservice⟩ 'provision of services',
 ⟨Weihnacht's Baum Verkauf⟩ for ⟨Weihnachtsbaumverkauf⟩ 'Christmas-tree sale',
 ⟨Erzgebirg's-Fenster⟩ for ⟨Erzgebirgsfenster⟩ 'window in the style of the Ore Mountains',
 c. ⟨Bauer'n Hof⟩ for ⟨Bauernhof⟩ 'farm'

In a longer text, the blank for a morpheme boundary could be confused with a word boundary, so that the syntactical structure would become unclear, but these examples usually appear in the "syntactically reduced environment" („Umfeld [...] syntaktisch reduziert“, Klein 2002: 181) of billboards and short announcements.

Some non-normative German apostrophes in inflected or affixed proper names resemble the Turkish apostrophe as in (9):

- (22) ⟨Zscherben'er Landbäckerei⟩ 'Zscherben country bakery',
 ⟨Pillersee'r Holzhaus⟩ 'Pillersee framehouse'

(If not indicated otherwise, the spelling of all the examples in (22)–(25) is normative without the apostrophe, i.e. ⟨Zscherbener Landbäckerei⟩ etc.)

The following examples contain instances of 'graphical code-switching'. In (23) inflection is detached by an apostrophe in foreign words as in the Russian,

Polish and Finnish examples in (12), and the reasons for the apostrophe in (24) are 'logographic' letters and numbers as in the English examples in (13):

- (23) a. ⟨das fit'e Sportstudio⟩ for ⟨das fitte Sportstudio⟩ 'the fit sports studio',
 ⟨puzzle'n⟩ for ⟨puzzeln⟩ 'to puzzle'⁹
 b. ⟨Baguette's⟩ 'baguettes', ⟨Crepe's⟩ 'crêpes'
 c. ⟨mail't mir!⟩ 'send me an e-mail', ⟨mit CD-PLAYER'N⟩ 'with CD players',
 ⟨CD-ROM's⟩ 'CD-ROMs', ⟨LASER'n + Stanzen⟩ 'lasering and chadding'
 (24) a. ⟨Pkw's⟩, plural of ⟨Pkw⟩, abbr. for *Personenkraftwagen* 'passenger car'¹⁰
 b. ⟨X'Mas-Effekte⟩¹¹ 'Xmas effects'
 c. ⟨68'er⟩ 'someone who took part in the student revolts of the 1960s and 1970s'

Finally, a very popular function of the apostrophe in German is the indication of the zero morph in the imperative form. In those cases where there is also an alternative form ending in *-e* (25 a), this use of the apostrophe was regarded as correct until 1929, the 10th edition of the Duden (cf. Baer 1988: 142):

- (25) a. ⟨geh'⟩ (normative: ⟨geh⟩ beside ⟨gehe⟩) 'go!',
 ⟨bleib'⟩ (normative: ⟨bleib⟩ beside ⟨bleibe⟩) 'stay!'
 b. ⟨gib'⟩ (normative: ⟨gib⟩; not *⟨gibe⟩) 'give!',
 ⟨miss'⟩ (normative: ⟨miss⟩; not *⟨misse⟩) 'measure!'

There is, incidentally, a similar phenomenon in English as in German (for websites on incorrect apostrophe usage in English cf. Frieze 2000 and Richards 2001). In English, however, apostrophes are not only placed in contradiction to orthographic rules but also omitted where they should be (cf. Barfoot 1988). This is because according to many writers' intuition the apostrophe has to indicate only those morpheme boundaries that are regarded as unclear, and the demand for clarification depends on the word stem rather than the function of the attached ending (possessive or plural). Thus, we find both apostrophized plurals like ⟨video's⟩ or ⟨banana's⟩, where the writer obviously felt the need to clarify the morphological structure (cf. (18), (37)), and possessives without apostrophe like ⟨Doctors Surgery⟩ or ⟨Bentleys International Ladies and Gents Hair Stylists⟩, where there was no apparent need to do so (examples from Barfoot 1988: 123–125).

All these norm violations show that the apostrophe as a marker of morpheme boundaries, although neglected by the official Duden norm, does exist

in the intuition of many, in this case German, native writers. This is a fact upon which Peter Gallmann and Wolf Peter Klein agree. Gallmann (1985 and later) calls this apostrophe “morpheme-delimiting” („morphemabtrennend“), while Klein (2002) speaks of a “logographic” function of this apostrophe. However, both regard this kind of apostrophe as a rather new development in addition to its traditional omissive function. Of course this new development is quite in accordance with an ever-improving reading process: Nowadays instead of a once “phonic” loud reading we read very fast and quietly, which can be achieved only with a “logographic” method that does not involve a phonetic recoding before the words or morphemes are recognized as such (cf. Günther 1988).

However, I would like to show that the “logographic” function of the apostrophe is primary rather than just additional, both synchronically and diachronically.

3. The synchronic status of the morphological function

As we have seen, there are lots of orthographies that make use of the apostrophe as a boundary marker but do not have any omissive apostrophe, e.g. Turkish, Russian, Polish or Finnish (cf. (9), (12)). In other languages all apostrophes are traditionally explained as cases of omission, but can just as well be explained by morpheme boundaries, e.g. French or Italian (cf. (16)).

3.1. English

In English the situation is similar; almost all omissive apostrophes in fact mark a morpheme boundary:

(26) ⟨you've⟩, ⟨that's⟩, ⟨we're⟩, ⟨they'd⟩, ⟨I'd⟩, etc.

There is only a closed set of very few exceptions where the apostrophe does not coincide with a morpheme boundary:

- (27) a. ⟨n't⟩ for *not*: ⟨isn't⟩, ⟨mustn't⟩, ⟨aren't⟩, ⟨haven't⟩, etc.; ⟨ain't⟩
 b. ⟨-in'⟩ for *-ing*, e.g. ⟨dancin'⟩, ⟨singin'⟩, etc.
 c. ⟨'em⟩ for *them*
 d. ⟨Hallowe'en⟩ (traditionally [ˌhæləʊ'i:ən])
 e. ⟨fo'c'sle⟩ [ˈfəʊksl̩], ⟨bo'sn⟩/⟨bos'n⟩/⟨bo'sun⟩¹² [ˈbəʊsn̩]
 f. ⟨ma'am⟩ [ˈmæm]

First of all, it should be noted that neither these exceptions nor the cases in (26) ever appear in a formal written text, i.e. a text obeying all linguistic norms. They are only used “in order to reproduce a perceived pronunciation or to give a highly informal flavor to a piece of writing” (Webster 1993: 1325) or in poetry for metrical reasons. In the case of *fo'c'sle* and *bo'sn* these spellings are obviously a kind of eye-dialect indicating the professional slang of sailors. (Note that it is not the danger of spelling-pronunciation, i.e. of pronouncing ‘omitted letters’, that triggers the use of the apostrophe; otherwise words like *forehead* [ˈfɔrɪd] or *often* [ˈɒfɪn] should be spelled something like *⟨for'id⟩ or *⟨of'n⟩, too. But these words belong to the standard, which has no omissive apostrophe.) In a formal text all the spellings in (27) are replaced with spellings without an apostrophe, e.g. ⟨you have⟩, ⟨is not⟩, ⟨Halloween⟩ (nowadays [ˌhælə'wi:n]; not †⟨All Hallows' Even⟩!), ⟨madam⟩ (or, addressing a queen: ⟨Your Majesty⟩), and ⟨forecastle⟩ and ⟨boatswain⟩ (pronounced [ˈfəʊksl̩] and [ˈbəʊsn̩]; [ˈfɔ:kɑ:s] and [ˈbəʊtsweɪn] are spelling-pronunciations judged wrong).

Apart from that, it is rather easy to show that all these exceptions are irregular in yet some other ways, e.g. in *fo'c'sle* the sound combination [ɔr] has changed to [əʊ] rather than [ɔ:] as should be expected; in *can't* we have a tense vowel [ɑ:] (or [æ:]) instead of lax [æ] in *can* and *cannot*; and the (voiceless) consonant cluster [st] of *must* is replaced by a (voiced) consonant [z] in *mustn't*. In several of these cases more is ‘omitted’ than is marked by apostrophes:

- (28) a. ⟨can't⟩ instead of †⟨ca'n't⟩ (19th c.¹³) < *cannot*
 b. ⟨Hallowe'en⟩ instead of *⟨'Hallow'e'en⟩ < *All Hallows' E'en*
 c. ⟨fo'c'sle⟩ instead of *⟨fo'c's'le⟩ < *forecastle*
 d. ⟨bo'sn⟩ etc. instead of *⟨bo's'n⟩ < *boatswain*
 e. ⟨mustn't⟩ instead of *⟨mus'n't⟩ as pronounced [ˈmʌzn̩t]

The existence of exceptions like the ones in (27) can also be seen in the context of functional imperfection, which is inherent in writing systems (cf. Primus, this volume).

3.2. German

The situation in German is similar. Most apostrophes fulfil a morphological function (cf. (11), where this function is exclusive, and (14 ab) and (15 b), where there is also omission). Duden (2000) recommends that an apostrophe is placed only in those cases when the omission would make a word form “difficult to read or ambiguous” („schwer lesbar oder missverständlich“, § 96.2 of the official regulation) – in other words: when the morphological structure

would be unclear. This is the case in (14 a) above, where ⟨rauscht⟩ without the indication of a zero morph would be mistaken as present tense, or in the following example (from a lullaby by Johannes Brahms):

- (29) ⟨Schlaf nun selig und süß, schau im Traum 's Paradies⟩
for ⟨Schlaf nun selig und süß, schau im Traum das Paradies⟩
'Now sleep happily and sweetly, see paradise in your dreams'

The ⟨s⟩ of *das* 'the' has to be detached from ⟨Traum⟩ 'dream' because it could otherwise be confused with a genitive ending ⟨Traums⟩.¹⁴ No confusion is possible in the following omissions, where there is no morpheme boundary involved, as the omitted elements are part of the stem:

- (30) ⟨trockner Boden⟩ for ⟨trockener Boden⟩ 'dry ground',
⟨Bursch⟩ for ⟨Bursche⟩ 'lad',
⟨öd⟩ for ⟨öde⟩ 'deserted, waste; dull',
⟨heut⟩ for ⟨heute⟩ 'today'

There are some few examples where apostrophes appear also in other places than morpheme boundaries:

- (31) a. ⟨Käpt'n⟩ for ⟨Kapitän⟩ 'captain (of a ship)'
d. ⟨'s ist schon spät.⟩ for ⟨Es ist schon spät.⟩ 'It is already late.'
c. ⟨Kommen S' 'nauf!⟩ for ⟨Kommen Sie hinauf!⟩¹⁵ 'Come up here!'
d. ⟨g'nug⟩ for ⟨genug⟩ 'enough'

Just like the English spellings in (27), these are transcriptions of very colloquial pronunciation (in the case of (31 a) sailors' slang again, while (31 cd) are confined to the South German dialect area). Their status is much lower than that of English ⟨isn't⟩ etc.; it is more comparable to ⟨ain't⟩. Consequently, these apostrophes usually do not appear in written texts unless in a literary attempt to convey non-standard pronunciation.

3.3. Articles

With articles the apostrophe helps to mark the beginning of the lexical item, which is "the psychologically most salient part of any word" (Hawkins & Cutler 1988: 295). The importance of the beginning of a lexical stem is best explained by the fact that "the onset of a spoken word arrives first at the listener's ear" (ibid., 298) and that the mental lexicon is organized accordingly.

Thus proclitic articles are usually detached by an apostrophe (as in French or Italian, cf. (16)) or a white space (as in English or German), while enclitic articles are not:

- (32) a. Danish ⟨bilen⟩ 'the car' vs. ⟨en bil⟩ 'a car',
⟨æblet⟩ 'the apple' vs. ⟨et æble⟩ 'an apple'
(note that there is no *⟨æble't⟩ or *⟨æbl'et⟩, though from *æble + et!*)
b. Bulgarian ⟨студентът⟩ (studentāt) 'the student',
⟨селото (seloto)⟩ 'the village'

From this point of view the apostrophe is in alternation with white space, so that it has to fulfil a similar function:

- (33) a. Italian ⟨un'edizione⟩ 'an edition' vs. ⟨un editore⟩ 'an editor'
b. French ⟨l'homme⟩ 'the man' vs. ⟨la femme⟩ 'the woman'

This function is to help the reader understand the morphological structure at once by indicating a word (or morpheme) boundary and thus disambiguating the morphological structure. This function of the apostrophe was already observed by Lombardelli (1585: 200 f.; quoted in Salmon 1999: 286) in the following Italian 'minimal pairs', to which I add English examples from Room (1989: 23) and Bolinger (1946: 338):

- (34) a. Italian ⟨danni⟩ 'damages' vs. ⟨d'anni⟩ 'of years',
⟨luna⟩ 'moon' vs. ⟨l'una⟩ 'the one',
⟨serra⟩ 'sierra; hothouse' vs. ⟨s'erra⟩ 'errs, is mistaken'
b. English ⟨were⟩ vs. ⟨we're⟩, ⟨hell⟩ vs. ⟨he'll⟩, ⟨shell⟩ vs. ⟨she'll⟩,
⟨Well, look at that.⟩ vs. ⟨We'll look at that.⟩;
⟨the dog's masters⟩ vs. ⟨the dogs' masters⟩

4. History of the apostrophe

We have seen that the vast majority of apostrophes can be explained as indicating a morpheme boundary. This applies to most *types* in all texts, and all the *tokens* in formal texts, in all languages (incl. English, German, French). In many languages (e.g. Turkish, Russian, Polish; cf. examples (9) and (12) and Bunčić 2002) it even applies to all apostrophes in all texts. Those examples of apostrophes that do not indicate morpheme boundaries are few, highly irregular and always indicate a deviation from the norm, so that they never occur in formal written texts.

Still, most grammar books treat the apostrophe as a mark that primarily indicates omission and neglect its morphological function. This paradox, however, has a rather simple historical explanation.

4.1. Origins

Unfortunately there is very little material on the earliest history of the apostrophe, which was introduced into the Latin alphabet from Greek (cf. Parkes 1992: 55 and 138, fn. 75¹⁶; Klein 2002: 183), because most palaeography books do not deal with punctuation in much detail, if at all, and usually completely forget about the apostrophe. However, for the point being made here it will suffice to look at the earliest English and German grammar books that mention the apostrophe and the orthographic practice since the 16th century.

In Early Modern English the apostrophe was used to separate words that were melted into one another at the expense of the final vowel of the first word (cliticization). This is illustrated by the examples cited by John Hart (1551: 153, quoted in Salmon 1999: 22 f.):

- (35) a. <Christians d'obey th'officers and rulers, that b'appointed of God in th'Earth>
 b. <writ th'articles plaine t'understand>

This is also the rule applied to modern editions of Ancient Greek texts, cf. ἀποεμου (ap'emou) for ἀπο ἐμοῦ (apo emou) 'from me'.

In German this rule applied only to the vowel *e*, as Martin Opitz (1624: F 3^b/33 f., also quoted by Klein 2002: 184, fn. 17) observed in chapter VII of his *Book of German Poetry*:

- (36) Das e / wann es vor einem andern selblautenden Buchstaben zue ende des wortes vorher gehet / es sey in wasserley versen es wolte / wird nicht geschrieben vnd außgesprochen / sondern an seine statt ein solches zeichen ' dafür gesetzt.

Translation: When there is an ⟨e⟩ at the end of a word before a following vowel, in whatever kind of verse, it is neither spelled nor pronounced, but instead a symbol like this ⟨'⟩ is placed.

Opitz (1624: F 3^b/34) cites a lot of examples from poetry, e.g. ⟨mein' ergetzung⟩ for ⟨meine ergetzung⟩ 'my delight' or ⟨so lang' ein Hirsch wird lieben püsche' und Heiden⟩ for ⟨so lange ein Hirsch wird lieben püsche und Heiden⟩ 'as long as a deer will love bushes and moors'. He includes words beginning

with *h-*: ⟨die künstlich' hand⟩ for ⟨die künstliche hand⟩ 'the artistic hand' (Opitz 1624: G 1a/36).

4.2. Orthographic practice

So when the apostrophe was introduced into English and German there were at least two necessary conditions:

1. a word boundary (and the word to the right has to begin with a vowel)
2. an omitted vowel (in German only *e*)

However, soon apostrophes were also placed when only one of these conditions was fulfilled, and both conditions were extended, so that now there were two individually sufficient conditions:

1. a morpheme boundary that renders the recognition of the word stem difficult
2. an omitted letter (or more)

Consequently, on the one hand the apostrophe was placed between the stem especially of foreign words and the plural or genitive ending *-s* (in both English and German):

- (37) a. 18th c. English: ⟨idea's⟩, ⟨folio's⟩, ⟨quarto's⟩, ⟨genius's⟩, ⟨species's⟩ (Sklar 1976: 178)
 b. 19th c. German: ⟨alle Comma's⟩ (nowadays ⟨alle Kommas⟩) 'all commas' (Zimmermann 1983/84: 424)

On the other hand, in verse it was important to be able to leave out a syllable (i.e. a vowel) anywhere, not just at word boundaries. Therefore the apostrophe was placed wherever a vowel was omitted:

- (38) a. <For thou art so possess'd with murd'rous hate / That 'gainst thyself thou stick'st not to conspire, > (William Shakespeare, Sonnet X)
 b. <er war itzt eben dran, / 'n Zahn ausziehn zu lassen.> for <... einen Zahn ausziehen zu lassen.> 'he was just having a tooth extracted' (Matthias Claudius, „Urians Reise um die Welt“)
 c. <Und der wilde Knabe brach / 's Röslein auf der Heiden> for <... das Röslein ...> 'And the wild boy broke the heath-rose' (Johann Wolfgang Goethe, „Heidenröslein“)

Another reason for putting apostrophes where there was no word boundary was probably the need of printers to adjust lines manually; here it could be very helpful to replace a wide letter (possibly, plus space) by a narrow mark.

4.3. Orthographic theory

The grammar and orthography books sanctioned the extension of the omissive apostrophe at once due to the high prestige of poetry. If this function of the apostrophe was needed and therefore used in poetry, it had to be correct. The morphological function of the apostrophe, which was a requirement of more practical texts, had a much harder time to be accepted by grammarians. In English the possessive apostrophe was accepted by grammarians only “by the middle of the eighteenth century” (Sklar 1976: 177). In German it was sanctioned only under certain conditions in 1998, although it had already been allowed by Adelung (1782), but then forbidden again in 1876 (cf. Zimmermann 1983/84: 419). The plural apostrophe, which has a long tradition in both English and German practice (cf. (37)), is accepted in neither of these languages.

5. Conclusion

We have seen that at least since the 16th century the European languages have been using the apostrophe with a morphological function (to delimit morphemes). This morphological function is the only one in contemporary written standard languages (formal style). The substituting function traditionally emphasized by grammarians only plays a minor role, in verse and in the transcription of colloquial speech.

As demonstrated at the beginning of this paper, morphological information can be vital for the recoding of letters into sounds. However, for the central aim of reading — the semantic understanding of the written text (which might just as well be achieved without phonetic recoding) — the morphological structure of the text is even more important. This morphological structure is what the apostrophe in its ‘logographic’ function helps the reader to understand more quickly.

Notes

1. In this paper the terms *writing system* and *orthography* are used in Coulmas’ (1989: 37-39) sense.
2. The only linguists I know to have treated the apostrophe in a thorough synchronic analysis are Gallmann (1985, 1989, 1996) and Klein (2002). Profound diachronic analyses are provided by Zimmermann (1983/84) for German and Sklar (1976) for English. However, there are lots of newspaper and journal articles and webpages in which people complain about the widespread ‘wrong’ use of the apostrophe in the sense of a language-decay argument (cf. Klein 2002 for a list of some recent German publications). Sometimes this attitude is expressed even in otherwise objective linguistic descriptions like Zifonun, Hoffmann & Strecker (1997: 261; cf. Gallmann 2000). A rather unusual position in this discussion is taken by Room (1989), whom the troubles people obviously experience with this syngrapheme have driven to propose the complete abolition of the apostrophe in English.
3. The omissive origin of the possessive apostrophe is only a myth (cf. Sklar 1976: 178). See section 4.2 of this paper for a more appropriate explanation.
4. Abbreviation in this sense differs from omission in that it is only a spelling abbreviation, the pronunciation of which is identical to the long form. In contrast to this, *omitted* letters correspond to a reduced form in pronunciation as well.
5. Many examples in this paper are taken from Bunčić (2002), which is based on contributions from Miikka-Markus Alhonen, Michael A. Covington, Peter T. Daniels, Yehuda N. Falk, Christine Haunz, Johannes Heinecke, Wolf Peter Klein, Mark A. Mandel, Marc Picard, Lukas Pietsch, Donald F. Reindl, Charley Rowe, Nino Vessella, Rémy Viredaz, Jeremy Whistle, and Barbara Zurer Pearson.
6. Of course, nowadays the possessive ⟨’s⟩ is not confined to proper names, though as a rule it is nouns denoting human beings that select the possessive form -s, whereas other nouns usually select the possessive construction with *of*. But cf. Little (1986: 15): “Initially, the possessive apostrophe was used more widely with proper names than with common nouns.”
7. Note that the apostrophe is only needed if the boundary is not already marked otherwise. Therefore e.g. in a German encyclopaedia article, ⟨B.s Dramen⟩ for *Brechts Dramen* ‘Brecht’s plays’ is written without an apostrophe in spite of the code-switching and the proper name because the period is enough indication of the boundary.
8. It is not a necessary condition, since there are also morphologically non-complex words like *Topas* ‘topaz’, *türkis* ‘turquoise’ or *las* ‘read (past tense)’, in which single vowel letters before a final ⟨s⟩ correspond to tense vowels. However, these vowels are always stressed. Note that this kind of apostrophe is virtually identical to both former English and German practice (cf. (37) below) and the norms of modern Dutch (e.g. ⟨auto’s⟩ ‘cars’, ⟨paraplu’s⟩ ‘umbrellas’).

9. In these cases the apostrophe establishes graphical morpheme constancy, which does not exist between the correctly spelled stems ⟨fitt-⟩ and ⟨puzzel-⟩ and the base form ⟨fit⟩ ‘fit’ and the noun ⟨Puzzle⟩ ‘jigsaw puzzle’, respectively.

10. The incorrect spelling is attested twice by Oelwein (1997), and a *Google* search for “Pkw’s” renders about 8280 hits. In oral speech this word form is usually pronounced [ˈpe:ka:ve:s]. The spelling preferred by Duden (2000) is ⟨Pkws⟩, which, however, is misleading, as it might just as well be pronounced [pe:ka:ve:ʔes]. (Capitalized ⟨PKWs⟩ would be unambiguous, but the singular form is rarely spelled ⟨PKW⟩.) The zero plural ⟨Pkw⟩, which used to be codified as well (e.g. still in Duden 1967), is often argued to be correct because the explicit form *Personenkraftwagen* does not change in the plural, either. However, *Pkw* is not just a written abbreviation but a spoken word in its own rights and with its own morphological characteristics.

11. As the word *Christmas* is English and not German, it cannot have a normative German spelling, so that it would have to be spelled as it is in English, viz. ⟨Xmas⟩.

12. Hornby (1987) attests the spellings ⟨boʹsn⟩ and ⟨boʹsun⟩, whereas Webster (1993) gives ⟨bosʹn⟩ and ⟨bosun⟩. Both list them only as variants of the main entry ⟨boatswain⟩.

13. Thanks for this information to Peter T. Daniels (cf. Bunčić 2002).

14. There seems to be a constraint that prohibits one-letter words in German, so that ⟨schau im Traum s Paradies⟩ with only a space between ⟨Traum⟩ and ⟨s⟩ is impossible, though it would be just as unambiguous as the version with apostrophe.

15. In this case not even the uncontracted form is normative; in Standard German it should be ⟨Kommen Sie herauf!⟩.

16. Of course Parkes (1992: 55) sees no other function of the apostrophe than “to indicate omissions”, at first vowels and later consonants, too. He does not see the morphological implications of the fact that these omitted vowels had to be at the word boundary.

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