A Smurf-based Approach to Placeholder Expressions

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Abstract

The *Smurf* comics series is, among others, famous for the so-called *smurf language*, in which words or parts of words can be replaced by *smurf*. We will argue that this *smurfing* has the properties of placeholding. Based on data from German translations of Smurf comics, we will provide a formalization of smurfing in German which can be generalized to a theory of placeholder expressions.

1 Introduction

Placeholder expressions are item such as those in (1).

(1)   whatsit, whatchamacallit, thingamajig, what's-his/her-name, what-d'you-call-her/him, you-know-who, so-and-so

Cheung (2015) assignes them the following properties: First, they substitute a *target*. Second, the target can be a word, a phrase, but also a syllable. Third, there must be some pragmatic reasons for why the speaker utters the placeholder instead of the target.

In this paper, we will connect placeholder expressions and the *Smurf language*. The Smurfs are comics and cartoon figures which were invented by the Belgian cartoonist Peyo (Pierre Culliford) and which have been published since 1958. While originally in French, the Smurf comics have been translated into more than 25 languages. The "language" of the Smurfs, or rather their way of speaking is characterized by the use of the expression *smurf*, or its equivalent in the language of the publication, to replace words or parts of words. This is shown in (2) with the same example, taken from the English and German translations of the French original in (2c).

(2)   *The Hungry Smurfs*. p. 7

   a. What a disaster! It makes you want to <u>smurf</u> (= tear) your hair out!
   (en)

   b. Welch eine Kataschlumpfe (= Kataschlumpfe 'catastrophe')! Es ist zum <u>Schlümpfe</u> (= <u>Haare</u> 'hair') ausraufen! (de)

   c. Quel désastre! C'est à s'arracher les <u>schtroupfs</u> (= cheveux 'hairs')! (fr)

The connection between the Smurf language and placeholder expressions that we want to explore in this paper can be traced back to the creation myth of the Smurf language. It has been repeatedly reported that the origin of the Smurf language goes back to the following conversation between Peyo and André Franquin, quoted from (Dayez, 2013, 9), our underlining and translation.

Peyo:	André, passe-moi la…allez, le…le <u>schtroumpf</u>, là, près de toi!
	'André, pass me the…<u>smurf</u> there, next to you!'
André:	Tiens, voilà ton <u>schtroumpf</u>! 'Here comes your <u>smurf</u>'
Peyo:	Merci de me l'avoir schtroumpfé, …
	'Thanks for <u>smurf</u>ing it to me.'
	quand je n'en aurai plus besoin, je te le <u>reschtroumpferai</u>.
	'when I don't need it anymore, I'll <u>smurf</u> it back to you.'

In its first occurrence, the nonce word *schtroumpf* is used as an ad hoc placeholder as Peyo could not think of the word for salt. Franquin picks this word up and the two continue using it in an ever more playful way.

We will argue that smurfing has properties that make it a placeholder phenomenon: *smurf* replaces another expression and has special pragmatics. At the same time, *smurf* differs from other placeholders in that it is not used for filling a cognitive or lexical gap. Nonetheless, we claim that the analysis of smurfing will be a step towards an analysis of placeholder expressions in general.

We present two previous approaches to placeholder expressions in Section 2. In Section 3, we discuss the properties of German smurfing. An HPSG modelling of smurfing as a placeholder phenomenon is given in Section 4. We summarize our main results and point to future directions of research in Section 5.

2 Previous approaches to placeholder expressions

In this section, we will review the approaches to placeholder expressions in Enfield (2003) and Cheung (2015). Enfield (2003) argues that a placeholder makes a rather general truth-conditional semantic contribution, but its range of meaning can be constrained, and there are additional conditions on whether the speaker and/or the addressee can recover the target expression. We illustrate this with Enfield's analysis of the English placeholder *you-know-WHAT* in (3).

(3) *you-know-WHAT* (Enfield, 2003, 107)
    a. Something
    b. I don't want to say the word for this thing now
    c. I don't say it now because I know I don't have to
    d. By saying *you-know-WHAT* I think you'll know what I'm thinking of.

The variation in the range of meaning can be seen by contrasting *you-know-WHAT* with *you-know-WHO*, where only the latter is restricted to persons. Variation with respect to the accessibility of the replaced expression can be seen by contrasting *you-know-WHAT* with *WHAT-d'you-call-it*, which points to a (temporary) unavailability of the expression to the speaker.

The speaker-addressee related aspects of the characterization of placeholder expressions in Enfield (2003) have the properties of what is discussed under

the label of *use-conditional meaning* in Gutzmann (2013) and Gutzmann & Mc-Cready (2016), among others. Whereas we can ask whether the truth-conditional meaning of a sentence is true or false, the appropriate question for an expression with use-conditional meaning is whether it is used felicitously (Gutzmann & McCready, 2016). One type of expressions with use-conditional meaning are *slurs,* such as the word *kraut*. The word (truth-conditionally) refers to Germans, it is used felicitously if the speaker has a negative attitude of the speaker towards Germans in general. Use-conditional meaning has the projective properties of conventional implicature (Karttunen & Peters, 1979; Potts, 2005) and usually comes with speaker-addressee attitudes.

While we agree with most of Enfield's characterization of placeholder expressions, we do not think that they necessarily come with a vague, general truth-conditional semantics. We can show this with cases of replacement of parts of idioms by placeholder expressions. As we will concentrate on German data in the main part of this paper, we will use German examples here, too.

The idiom in (4) contains the word *Barthel,* a so-called *phraseologically bound word* or *cranberry word*. Such words are usually not found outside a particular expression (Aronoff, 1976; Dobrovol'skij, 1989; Richter & Sailer, 2003).[1] As the word *Barthel* is restricted to this expression, we cannot indicate a translation for it. Example (4) shows that the bound word cannot be replaced within the idiom with a general term such as *jemand* 'someone' or *etwas* 'something'.

(4) zeigen, wo   Barthel/ #jemand/ #etwas   den Most holt
     show   where   ??/   someone/ something the cider gets
     'show s.o. what's going on'

Contrary to this, idiom parts can be replaced with placeholder expressions. This is shown for the word *Barthel* in (5), which is replaced by the German placeholder expression *Dingsbums* 'thingamajig' (glossed as PHE for *placeholder expression*). This contrast between general terms and placeholder expressions is not compatible with Enfield's analysis of the truth-conditional meaning of placeholders.

(5) [sie] waren so motiviert, uns zu zeigen, wo   Dingsbums
     they were so motivated to.us to show   where PHE

     (= Barthel) den Most holt, daß...
        ??   the cider gets that

     'they were to motivated to show us what's going on that ...'[2]

Cheung (2015) is not very detailed with respect to what we consider the use-conditional meaning of placeholder expressions, but provides a different

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[1]See https://www.english-linguistics.de/codii/ for English and German bound words.
[2]https://tinyurl.com/y5f72cdz, accessed 14.10.2020.

approach to their referential meaning. He considers placeholders *metalinguistic demonstratives*. This means that they denote the expression that they replace. If *what's-her-name* is used instead of the name *Robin*, for example, the placeholder refers to the word *Robin*, i.e. ⟦*what's-her-name*⟧ = *Robin*. Whenever a placeholder is used, there is also an operator **SHIFT** in the structure. This operator, then, maps the expression denoted by the placeholder to its denotation, i.e. [[**SHIFT**(*Robin*)]] = [[*Robin*]] = **robin**.

This approach presents an elegant answer to the question of how a placeholder and its target are connected semantically. However, it is not clear if it captures all aspects of this connection. We will address this point in more detail in our discussion of the smurfing data.

There is, however, one problem. Cheung (2015, 276) shows with examples such as (6) that placeholding can also affect phonological units. In this example, the target of the placeholder is the second syllable of the Chinese form of the French name *Hollande*.

(6) Ao-<u>shenme</u>-de (= Ao-lang-de) shi xianren Faguo zongtong.
   Ho-PHE-de   (Hollande)   be current France president
    'Ao-<u>something</u>-de (= Hollande) is the current President of France.'

The problem of the analysis is that Cheung (2015, 302) assumes that the placeholder, together with the **SHIFT** operator, forms a syntactic constituent that is inserted between the two intact syllables. While it is conceivable that the placeholder denotes the syllabel *lang*, it is not clear what kind of semantic object **SHIFT**(*lang*) would denote.

Our brief discussion of two formal approaches to placeholding shows (i) that placeholders come with use-conditional semantic aspects, (ii) that they can substitute concrete lexical items, and (iii) that they can even substitute meaningless parts of lexical items. We will show in the next section that smurfing has the same properties.

3 Properties of smurfing

In this section, we will turn to smurfing. We mainly use the data collected in Dörner (2012), which consist of the 536 instances of smurfing found in 6 German Smurf stories. This will be expanded by browsing through early English, French, and German Smurf comics (1958–1988). In addition, we will use data and observations from the literature on smurfing (Bollig, 2016; Bourcier & Martin, 1996; Chatzopoulos, 2008). Chatzopoulos (2008) will be an important source as she provides the first formal analysis of smurfing.

Chatzopoulos (2008) distinguishes a literal and a "semantically unspecified" use of the morpheme *smurf* – or its equivalent in other languages. In its literal use, as in (7a), *smurf* refers to Smurfs or anything Smurf-related. This use is

also found in the speech balloons attributed to non-Smurfs, such as Gargamel. The second use, illustrated in (7b), constitutes the special use that Chatzopoulos refers to as *smurfing*.

(7) a. Gargamel: Smurf-prints! (= footprints left by Smurfs)
         (Chatzopoulos, 2008)
     b. Are you making <u>smurf</u> (= fun) of me? (*The Fake Smurf*, 4)

In this section, we will look at two general properties of smurfing: its pragmatics and recoverability. Then, we will argue that there are two types of smurfing: phonological and morphological smurfing.

3.1 Pragmatics of smurfing

According to Chatzopoulos (2008), smurfing is a strong marker of Smurf identity. This is confirmed in an exemplary look at the German translations of two Smurf stories – *Der fliegende Schlumpf* (English title: *A Smurf in the Air*), and *Die Schlümpfe und die Zauberflöte* (English title: *The Smurfs and the Magic Flute*). In the first story, there are only Smurfs, i.e., all conversations are among Smurfs. We find smurfing in 33% of the panels in which there is a speech balloon. In contrast to this, the second story contains both Smurfs and non-Smurfs. In it, there is smurfing in 68% of the speech balloons showing Smurfs talking to each other. Smurfs use smurfing when talking to a non-Smurf in 23% of the panels. Non-Smurfs never use smurfing when talking to each other. There is no (successful) use of smurfing by a non-Smurf towards a Smurf.[3]

This indicates that non-Smurfs do not smurf. Furthermore, the smurfing rate is higher when Smurfs are depicted in contact with non-Smurfs than when they are among themselves. As smurfing is also used towards non-Smurfs – though to a lesser extent – it marks the Smurf identity of the speaker. This shows that smurfing is used to contrast Smurfs and non-Smurfs also linguistically. In other words, Smurfs are depicted in the comics as a special sociolinguistic group.

We will include this pragmatic property of smurfing in its use-conditional meaning, abbreviated as **Smurf-UC**.

(8) Identity use-conditional meaning of smurfing (**Smurf-UC**):
     By smurfing, a speaker is marked as Smurf and signals their Smurf-ness.

Such a kind of use-conditional meaning is not uncommon. It is, in fact, at the heart of classical variationist research in sociolinguistics – though rephrased in terms of formal pragmatics.

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[3]In this particular story, one non-Smurf tries to use smurfing to communicate with a Smurf, but never does so successfully.

3.2 Recoverability of smurfing

A central point in the research on smurfing is the question of the recoverability of the target. Chatzopoulos (2008) proposes an Optimality Theoretical approach to smurfing. She postulates a constraint SMURF: "Smurf all lexical morphemes." This constraint is outranked by a recoverability constraint which restricts smurfing to contexts in which the target can be recovered. She lists a number of factors that enable recoverability. One of them is phonological similarity, as in her example in (9).

(9)   s̲m̲u̲r̲f̲day (= birthday) (Chatzopoulos, 2008)

Smurfing of parts of multiword expressions enhances recoverability as well. Chatzopoulos (2008) explicitly mentions "proverbs, idioms and phrases with some degree of fossilization." We saw an example of this in (2) above, where part of the idiom *tear one's hair out* is smurfed. The third factor named in Chatzopoulos (2008) is a pragmatically rich context. Such a context is often provided by the pictures or the general situation.

Bollig (2016, 55) challenges this common opinion that smurfing is always recoverable providing the example (10) from the story *Schtroumpf vert et vert schtroumpf* (English title: *Smurf vs. Smurf*).

(10)   A: Qu'est-ce qui est s̲c̲h̲t̲r̲o̲u̲m̲p̲f̲, qui a un s̲c̲h̲t̲r̲o̲u̲m̲p̲f̲ vert et qui
       s̲c̲h̲t̲r̲o̲u̲m̲p̲f̲e quand on le s̲c̲h̲t̲r̲o̲u̲m̲p̲f̲e?
       'What is s̲m̲u̲r̲f̲, has a green s̲m̲u̲r̲f̲ and s̲m̲u̲r̲f̲s̲ when you s̲m̲u̲r̲f̲ it?'
       B: Je ne sais pas . . . un s̲c̲h̲t̲r̲o̲u̲m̲p̲f̲?
       'I don't know . . . a s̲m̲u̲r̲f̲?'
       A: Mais non, voyons! DEUX s̲c̲h̲t̲r̲o̲u̲m̲p̲f̲s̲!
       'But no, look! TWO s̲m̲u̲r̲f̲s̲!'
       (*Schtroumpf vert et vert schtroumpf*, p. 2; our translation)

While it is clear that the reader cannot recover the smurfing, the two Smurfs in conversation are depicted as being able to do so. Consequently, the speaker is depicted as assuming recoverability for the addressee. This is the same condition we find for the English placeholder *you-know-WHAT*, see (3d) above. We can formulate it as a second use-condition on smurfing in (11).

(11)   Recoverability use-conditional meaning of smurfing (**Recov-UC**):
       By smurfing the speaker thinks the addressee knows what target the
       speaker is thinking of.

After these two subsections on the pragmatics of smurfing, we will take a closer look at its grammatical properties in the following two sections.

3.3 Phonological smurfing

According to Chatzopoulos (2008), English *-smurf-* can replace one syllable, but keeps the overall metrical properties of the smurfed word. We find smurfing of individual (underlying) syllables in German as well, see (12). In the first line, we state the underlying syllable structure of the word containing the smurfing, together with its non-smurfed target. In the second line, we show the syllabification of the result.

(12) a. Ka.ta.schlumpf.e (= Ka.ta.stroph.e 'catastrophe')
          → Ka.ta.schlum.pfe
      b. schlumpf.est.ier.en (= pro.test.ier.en 'protest')
          → schlum.pfes.tie.ren

Note, however, that the first segment of the syllable *test* is deleted in (12b). This might be due to some simplification of the syllable structure, even though *schlumpf.tes-tie-ren* is in line with the phonotactic constraints of German. In any case, this example indicates that the phonological replacement mechanism does not seem to be fully deterministic.

We saw with the Chinese example from Cheung (2015) in (6) that such a syllable replacement is possible with genuine placeholders as well. Example (13) shows the replacement of a syllable by a placeholder in German.

(13) soll   an irgendeinen support eine analy...dingens datei
      must.1.SG to some   support an analy-PHE   file

      (= Analyse-datei) senden.
         analysis-file   send

      'I must send an analysis file to some support.'[4]

As this type of smurfing is phonologically conditioned, we refer to it as *phonological (p-)smurfing*.

3.4 Morphological smurfing

In this subsection, we will show that, at least for German, a phonological account of smurfing is not sufficient. Instead, there is a second type of smurfing, which we will call *morphological (m-)smurfing*.

In (14a) the form *ver-schlumpf-t* occurs as the smurfed version of the word *verstanden* 'understood'. If we had a pure phonological smurfing, we would expect to find *verschlumpfen*, see (14b) instead. This shows that the smurfed verb *ver-schlumpf-en* has a different inflectional paradigm than the target *ver-steh-en* 'understand'.[5]

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[4]https://tinyurl.com/y3kghypm, accessed 05.10.2020.

[5]We use the following abbreviations in the glosses of German examples: DER derivational affix, F feminine, GE prefix for past participle formation, INF infinitive, M masculine, N neuter, PTCP past participle, PL plural, PRS present tense, PST past tense, SG singular.

(14)   a. Hast du ver-schlumpf-t (= ver-stand-en)?
           have you DER-smurf-PTCP (= DER-stand-PTCP 'understood')

           'Do you understand?'

       b. *Hast du ver-schlumpf-en (= ver-stand-en)?

We also find cases in which there occurs a derivational affix that is not present in the target.

(15)   Eine schlumpf-ig-e   (= gut-e)   Idee!
       a   smurf-DER-F.SG   good-F.SG idea

       'a good idea'

In (15), the target adjective consists just of a simple morpheme as the stem to which an inflectional suffix attaches. The smurfed version, however, consists of the root *schlumpf*, the derivational affix *-ig* (which marks denominal adjectives), and the inflectional marking. A purely phonological smurfing process would have let to the simpler form *schlumpf-e*.

These two examples suggest that the target of m-smurfing is a morphological unit rather than a syllable. This can be further substantiated by looking at the possible size of the target. In (14a) above, the target was a root morpheme, *steh* 'stand'. We also find cases in which the target is a combination of a root and a derivational affixes, such as (16).

(16)   Um das Nützliche mit   dem Angenehmen zu schlumpf-en
       to   the useful   with the   pleasant   to smurf-INF

       (= ver-bind-en),   . . .
       (= DER-bind-INF 'connect')

       'to mix business with pleasure, . . .'

Finally, even entire compounds can be smurfed. The German expression of congratulation contains the compound *Glück-wunsch* 'luck-wish'. In our data, we find two possible smurfed forms of this word. In one, only the last component of the compound is replaced with *schlumpf*. In the other, the entire compound is realized as *Schlumpf*.

(17)   Herzlichen Glück-schlumpf/ Schlumpf (= Glück-wunsch)!
       hearly   luck-smurf/   smurf!   (= luck-wish)

       'Congratulations!'

This shows that, in fact, the target of smurfing can be any morphological unit that contains at least one root and excludes inflection.

Interestingly, we find the same for general placeholder expressions in German as well. In (18), there are two occurrences of the placeholder *Dings*. The first one replaces the compound *Glück-wunsch* 'luck-wish', the second the compound *Geburts-tag* 'birth-day'.

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(18) Herzlichen D̲i̲n̲g̲s̲ (= Glück-wunsch) zum D̲i̲n̲g̲s̲ (= Geburts-tag)!
      heartly   P̲H̲E̲ (= luck-wish)   to.the P̲H̲E̲ (= birth-day)

      'Congratulations to your birthday!'[6]

We have seen in (14a) that m-smurfing of verbs does not conserve the in-
flectional class of the target. The same is true for nouns. The masculine and
neuter noun form *Schlumpf* 'smurf' forms its plural with an umlaut, *Schlümpf-e*
'smurf-PL'. This umlaut also occurs if the target does not have an umlaut. This is
the case in example (2b) above. The neuter noun *Haar* 'hair' has an umlaut-less
plural *Haar-e*. Nonetheless, its smurfed form, *Schlümpf-e*, shows the umlaut.

On the other hand, there is no umlaut or additional plural affix its feminine
form, *Schlumpfe*, even if the target has an umlaut or an additional affix. This
is shown in (19). The feminine word *Hand* 'hand' forms its plural with umlaut
and *-e*, *Händ-e*. Nonetheless, the smurfed form remains *Schlumpfe*.

(19) . . . bin ich dabei, mir die S̲c̲h̲l̲u̲m̲p̲f̲-e (= Händ-e) zu waschen
          am I   busy me the s̲m̲u̲r̲f̲-DER (= hand-PL) to wash

      'I am busy washing my hands'

While a smurfed word does not inherit the inflectional properties and the
internal morphological structure of the target, it inherits a number of morpho-
syntactic properties, such as gender (for nouns) and auxiliary selection (for
verbs), as well as argument selection in general.

We saw instances of gender inheritance in the examples above, such as (19)
(feminine noun) and (17) (masculine noun). Auxiliary selection is illustrated
in (20). The smurfed verb combines with the perfect auxiliary *haben* 'have' in
(20a) and with the auxiliary *sein* 'be' in (20b), just as its target.

(20) a. Du hast schon ge-s̲c̲h̲l̲u̲m̲p̲f̲-t (= ge-wähl-t)!
         you have already GE-s̲m̲u̲r̲f̲-PTCP (= voted)

         'You have already voted!'

      b. Hast du aber Glück gehabt, dass ich gerade vorbei-ge-s̲c̲h̲l̲u̲m̲p̲f̲-t
         have you but luck had   that I   just   along-GE-s̲m̲u̲r̲f̲-PTCP
         (= vorbei-ge-komm-en) bin!
         (= come along)   am

         'How lucky you are that I have just come along!'

In all examples, the argument structure of the smurfed expression is the
same as that of the target. We add example (21), where the smurfed verb
occurs with a reflexive pronoun *sich* 'himself'. The target of the smurfed verb
is inherently reflexive. This shows that the argument structure does not follow
from the target's semantics but is inherited from the target. Consequently, a

m-smurfing	p-smurfing
depends on morphological structure	depends on syllable structure
target is (simple or complex) morphological unit	target is single underlying syllable
can combine with derivational affixes not in the target [*schlumpf-ig*]-*e* (= *gut-e*)	no internal complexity
form is determined by paradigm *schlumpf/schlümpf*	form is constant

Table 1: Differences between m- and p-smurfing

purely denotational relation between the placeholder and its target as in Cheung (2015) seems potentially problematic.

(21) Schnell, Gargamel be-schlumpf-t   (= be-weg-t) sich   etwas!
      fast,   Gargamel DER-smurf-3.SG.PRS (= moves)   himself a bit
      'Hurry up, Gargamel is moving a bit!'

The differences between m-smurfing and p-smurfing are summarized in Table 1. We showed that the distinction between phonological and morphological replacement can be found in general placeholding as well.

The data in this section illustrate the following properties of smurfing: There is a single inflectional word *Schlumpf* 'smurf' with umlaut, which has a literal and a placeholder use. The placeholder use comes with use conditions of Smurfness of the speaker and recoverablility of the target for the hearer. There are two types of smurfing: one that targets a phonological unit (p-smurfing), and one that targets a morphological unit (m-smurfing). We observed that these properties are also found in placeholder expressions. We take this as support for treating smurfing as an instance of placholding.

4   HPSG modelling

In the present section, we will develop our formal analysis of smurfing as part of an HPSG analysis of placeholding in general. We will use the morphological component of Bonami & Boyé (2006), extended with the modelling of compounding from Desmets & Villoing (2009). The inheritance of properties of the target to the overall smurfed expression will be expressed as *transparent heads*, which is a standard technique of HPSG, employed in Pollard & Sag (1994) and more explicitly in Levine (2010). We will assume that there are two lexemes *Schlumpf* – a literal and a non-literal lexeme. The two lexemes share the same
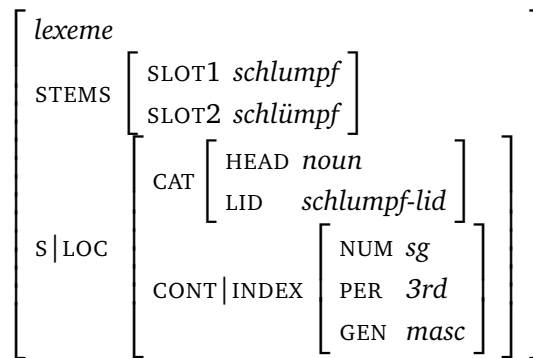
$$\begin{bmatrix} \textit{lexeme} \\ \text{STEMS} \begin{bmatrix} \text{SLOT1 } \textit{schlumpf} \\ \text{SLOT2 } \textit{schlümpf} \end{bmatrix} \\ \text{S}|\text{LOC} \begin{bmatrix} \text{CAT} \begin{bmatrix} \text{HEAD } \textit{noun} \\ \text{LID} \quad \textit{schlumpf-lid} \end{bmatrix} \\ \text{CONT}|\text{INDEX} \begin{bmatrix} \text{NUM } \textit{sg} \\ \text{PER } \textit{3rd} \\ \text{GEN } \textit{masc} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Figure 1: Lexical entry of the lexeme *Schlumpf* 'smurf'

inflectional paradigm. Smurfing is modelled as by allowing the use of the non-literal lexeme inside existing placeholder constructions of German.

4.1   Lexemes

Our formal modelling follows the empirical observations from Section 3 very closely. In this subsection, we will specify two related lexemes for the word *Schlumpf,* one for the literal and one for the non-literal use. We follow Sag (2012) and others in using a feature LEXICAL-IDENTIFIER (LID). The value of this feature is shared between a phrase and its head daughter. Nonetheless, contrary to other HPSG publications, we do not treat LID as a head feature but assume that it is defined on *category* objects.[7]

To account for the two uses of *Schlumpf* we assume that its LID value is of sort *schlumpf-lid*. This sort has two subsorts, *schlumpf-lit* and *schlumpf-phe*, for the literal and the non-literal use respectively.

Bonami & Boyé (2006) introduce a feature STEMS on lexemes, whose value for provides the stem allophones needed for inflection. Combining the features STEM and LID, we can specify the lexical entry for *Schlumpf* as in Figure 1.

This combines with constraints on the two different uses given in (22). The constraint in (22a) specifies that the literal use of *Schlumpf* refers to a Smurf. The non-literal, placeholder, use of *Schlumpf* does not have a semantics of its own, but contributes the two use conditions discussed in Sections 3.1 and 3.2: Smurf-ness of the speaker (**Smurf-UC**) and recoverability of the target for the addressee (**Recov-UC**). These two use conditions are included in the BACK-GROUND feature, which is the place for projective semantic contributions in HPSG (Pollard & Sag, 1994; Green, 1994).

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[7]This makes it possible to share head features among signs that do not belong to the same lexeme – see Figure 5 below and Soehn (2006) and Richter & Sailer (2009).

(22)   a. Constraint on the literal use of *Schlumpf*:

$$\left[\ \text{S}\,|\,\text{L}\,|\,\text{CAT}\,|\,\text{LID}\ \textit{schlumpf-lit}\ \right] \Rightarrow$$

$$\left[\ \text{S}\,|\,\text{L}\,|\,\text{CONT}\ \left[\begin{array}{l}\text{INDEX}\ \boxed{1}\\[4pt]\text{RESTR}\ \left\{\left[\begin{array}{l}\textit{smurf-rel}\\\text{INST}\ \boxed{1}\end{array}\right]\right\}\end{array}\right]\ \right]$$

b. Constraint on the non-literal use of *Schlumpf*:

$$\left[\ \text{S}\,|\,\text{L}\,|\,\text{CAT}\,|\,\text{LID}\ \textit{schlumpf-phe}\ \right] \Rightarrow$$

$$\left[\ \text{S}\,|\,\text{L}\,|\,\text{CTXT}\,|\,\text{BACKGROUND}\ \left\{\ \textsc{Smurf-UC, Recov}\ \right\}\ \right]$$

The sort *schlumpf-phe* is the LID value of the placeholder use of the word *Schlumpf*. We assume that this sort is not only a subsort of *schlumpf-lid*, but also of a sort *placeholder-lid* (*phe-lid*). The same is true for other lexemes that have both a placeholder and a non-placeholder use, such as *Ding* 'thing'. If a word has only a placeholder use, such as German *Ding(en)s* or *Dingsbums* (both 'thingamajig'), the sort of its LID value is a subsort of *phe-lid* exclusively. We saw in our brief summary of Enfield (2003) that placeholder expressions in general come with a use conditional meaning. They can, but need not, impose further restrictions on their syntax or semantics. In the case of *Schlumpf*, there is no semantic restriction, but it is specified as a masculine noun with a particular inflectional paradigm.

4.2   Placeholder constructions

In this subsection, we will present a general formalization of placeholding (in German). We assume that smurfing is regular placeholding, where the chosen placeholder is *Schlumpf*. We argued above that we need to distinguish two types of smurfing – and placeholding in general: phonological and morphological smurfing/placeholding. In all cases of smurfing/placeholding, the only semantic and pragmatic constraints contributed by placeholder are its use-conditional meaning. The semantics of the resulting expression as well as many of its morpho-syntactic properties are inherited from the target. To model this, we will assume that placeholding is a combination of two lexemes: a placeholder and its target. This combination is a generalization of compounding.[8] We think that phonological placeholding is an instance of *blending* (Fradin, 2015), whereas morphological placeholding is some other type of *subtractive lexeme combination* for which we have not found a fully parallel process outside placeholding yet.

As there is no explicit generalization of compounding in HPSG, we will take the architecture of Desmets & Villoing (2009) as starting point for our analysis.

---

[8]We are grateful to Berthold Crysmann and Marianne Desmets (p.c.) for stressing that placeholding is not an ordinary form of compounding.

$$
\textit{phe-cmplx} \Rightarrow
\begin{bmatrix}
\text{S}\,|\,\text{L} &
\begin{bmatrix}
\text{CAT} &
\begin{bmatrix}
\text{HEAD} & \boxed{3} \\
\text{LID} & \boxed{1}
\end{bmatrix} \\
\text{CTXT} &
\begin{bmatrix}
\text{BACKGROUND} & \Sigma \cup \boxed{2}
\end{bmatrix}
\end{bmatrix} \\[4ex]
\text{M-DTRS} &
\left\langle
\begin{bmatrix}
\text{S}\,|\,\text{L} &
\begin{bmatrix}
\text{CAT} &
\begin{bmatrix}
\text{HEAD} & \boxed{3}\ \textit{major-pos} \\
\text{LID} & \boxed{1}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\right\rangle \\[4ex]
\oplus
\left\langle
\begin{bmatrix}
\text{S}\,|\,\text{L} &
\begin{bmatrix}
\text{CAT}\,|\,\text{LID} & \textit{phe-lid} \\
\text{CTXT} &
\begin{bmatrix}
\text{BACKGROUND} & \boxed{2}
\end{bmatrix}
\end{bmatrix}
\end{bmatrix}
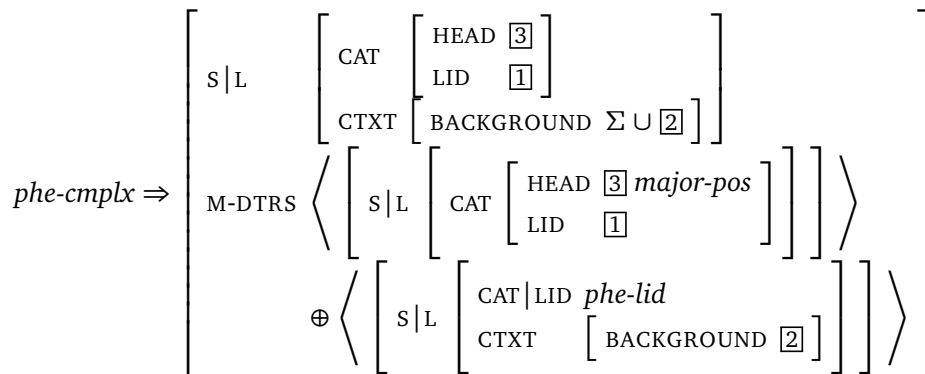\right\rangle
\end{bmatrix}
$$

Figure 2: Constraint on the sort *phe-cmplx*

In this approach, lexemes can be simple or complex. Compounds are cases of complex lexemes. The components of a compound are its *morphological daughters*, for which Desmets & Villoing introduce a list-valued feature M-DAUGHTERS. Using this feature architecture, we assume that there is a sort *phe-complex* (*phe-cmplx*), which has two morphological daughters: the placeholder and the target.

In Figure 2, we provide the general constraint on all placeholder complexes: There are two morphological daughters. One is a placeholder, i.e., its LID value is of sort *phe-lid*. The other one is the target. The target must be of a major part of speech. The overall expression inherits from the target (at least) its LID value ($\boxed{1}$) and its HEAD value ($\boxed{3}$). The use-conditional meaning of the placeholder is integrated into the use conditions of the complex – specified as the BACKGROUND set $\boxed{2}$.

This constraint on placeholding complexes captures a number of observations we have made in earlier sections. First, the target must be of a major part of speech and cannot be a functional morpheme. Second, placeholding is a process on lexemes, which means that inflection will be added to the placeholding complex. Third, the LID value of the complex is identical with that of the target.

This last property allows for the placeholding of parts of idioms and other fixed expressions, as observed in (4) and found massively in smurfing. Theories of idioms in HPSG have made heavy use of some way of lexeme-specific selection to guarantee that the idiom-specific words combine. Kay et al. (2015) show how this approach can be used even for syntactically fixed and semantically non-decomposable idioms such as *kick the bucket* 'die'. As a placeholding complex shares the LID value with the target, placeholding of idiom parts is immediately accounted for.

We can now turn to phonological placeholding, which we consider a type of blending. Fradin (2015) provides an overview of blending. In the classical cases, it is a very flexible type of combining lexemes in which truncated forms of the components are combined, as in English *brunch* (*br(eakfast)* + *(l)unch*)

p-phe-cmplx ⇒

$$
\begin{bmatrix}
\text{STEMS} & \textbf{internal-replacement-phon}(\boxed{3},\boxed{6}) \\[4pt]
\text{S}|\text{L} & \begin{bmatrix} \text{CAT} & \boxed{4} \\ \text{CONT} & \boxed{5} \end{bmatrix} \\[12pt]
\text{M-DTRS} & \left\langle \begin{bmatrix} \textit{simple-lexeme} \\ \text{STEMS} & \begin{bmatrix} \text{SLOT1} & \boxed{3} \end{bmatrix} \\ \text{S}|\text{L}|\text{CAT} & \begin{bmatrix} \text{LID} & \textit{phe-lid} \end{bmatrix} \end{bmatrix}, \begin{bmatrix} \text{STEMS} & \boxed{6} \\ \text{S}|\text{L} & \begin{bmatrix} \text{CAT} & \boxed{4} \\ \text{CONT} & \boxed{5} \end{bmatrix} \end{bmatrix} \right\rangle
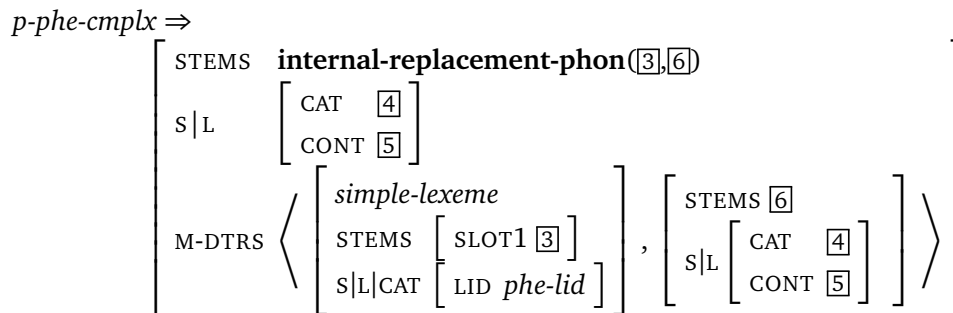\end{bmatrix}
$$

Figure 3: Constraint on p-placeholding

or German *Kripo* (*Kri(minal) + Po(lizei)* 'Criminal Investigation Department'). There are also blends in which one component is inserted into the other internally. Fradin (2015, 391) provides the French example *mét<amour>phose*, in which the word *amour* 'love' replaces (parts of) the second and the third syllable of *métamorphose* 'metamorphosis'. This is immediately reminiscent of the cases of p-smurfing discussed in Section 3.3, such as *Kata<schlumpf>e* (= Katastrophe 'catastrophe'), to use Fradin's notation.

We use the sort *p-phe-cmplx* to model p-placeholding. This sort is a subsort of *phe-cmplx* and, thus, inherits all properties from Figure 2. The sort *p-phe-cmplx* should ultimately also be treated as a subsort of the sort used for constraining (internal) blending. We treat the first component as the placeholder, the second component as the target. This is motivated by the fact that the second component determines most properties of complex words in German. The placeholder must be morphologically simple, whereas the target can be complex.

In this complex, the resulting word inherits its category and semantic properties from the target – given here as the CAT and CONT values ($\boxed{4}$ and $\boxed{5}$). This is more information than the minimal information inherited from the target specified in Figure 2. The constraint on the supertype *phe-cmplx* ensures that the use-conditional meaning of the placeholder daughter projects to the overall complex. The special phonological effect of internal blending is encoded in the function **internal-replacement-phon**. This function takes as its arguments, the relevant stem form of the placeholder and the STEM value of the target. The output is a replacement of part of the target's phonology by the placeholder's phonology. Fradin (2015) names general principles governing the way in which the phonology of blends is determined.

In Figure 4, we illustrate how the constraints in Figures 2 and 3 are at work to derive the word *Katschlumpfe* as a p-placeholder combination of *Schlumpf* and *Katastrophe*. The highest local tree is the projection from an (unflected) lexeme to its inflected word form. We simplify the feature geometry in the tree.

Next, we can look at m-placeholding, which we will model using a sort *morphological-phe-complex* (*m-phe-cmplx*). The constraint on this type is given in Figure 5. We saw in Section 3.4 that the inflectional properties of the com-

$$
\begin{bmatrix}
\textit{inflected-word}\\
\textsc{phon}\ \langle\ \textit{Kataschlumpfe}\ \rangle
\end{bmatrix}
$$

$$
\begin{bmatrix}
\textit{p-phe-cmplx}\\
\textsc{stems}\ \boxed{9}\ \begin{bmatrix}\textsc{stem1}\ \boxed{8}\ \textit{Kataschlumpfe}\\ \textsc{stem2}\ \boxed{8}\end{bmatrix}\\
\textsc{cat}\quad \boxed{4}\\
\textsc{cont}\quad \boxed{5}\\
\textsc{bgr}\quad \boxed{2}
\end{bmatrix}
$$

where $\boxed{9}$ = **internal-replacement-phon($\boxed{3}$,$\boxed{6}$)**

$$
\begin{bmatrix}
\textsc{stems}\ \begin{bmatrix}\textsc{stem1}\ \boxed{3}\ \textit{schlumpf}\end{bmatrix}\\
\textsc{bgr}\quad \boxed{2}\ \begin{Bmatrix}\textbf{Smurf-UC},\\ \textbf{Recov-UC}\end{Bmatrix}
\end{bmatrix}
\qquad
\begin{bmatrix}
\textsc{stems}\ \boxed{6}\ \begin{bmatrix}\textsc{stem1}\ \boxed{7}\ \textit{Katastrophe}\\ \textsc{stem2}\ \boxed{7}\end{bmatrix}\\
\textsc{cat}\quad \boxed{4}\\
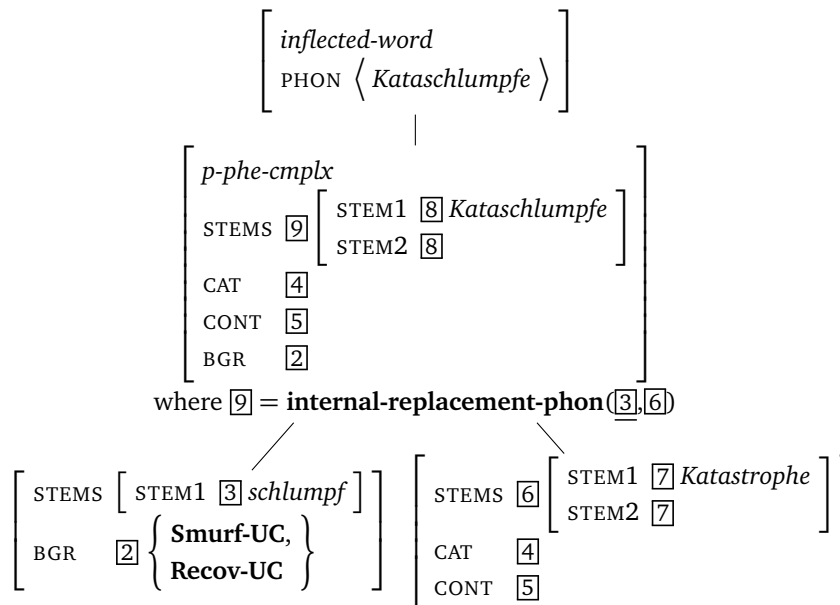\textsc{cont}\quad \boxed{5}
\end{bmatrix}
$$

Figure 4: Derivation of the word *Kataschlumpfe*

bination are determined by the placeholder, not the target. For this reason, we assume that the placeholder is the second component in m-placeholding. At the same time, the complex shares its HEAD, VAL, and CONT values with the target. This is modelled through the technique of *transparent heads*, i.e., the morphological head is specified as inheriting these properties from the non-head. In Figure 6, we provide the derivation of the complex placeholder *schlumpf-ig-e*.

The constraint on the sort *m-phe-cmplx* not only allows for potentially complex targets, but the placeholder may be complex as well. This captures the fact that we find deriviational affixes on the placeholder that are absent from the target, such as *schlumpf-ig-e* 'smurf-DER-F.SG' for *gut-e* 'good-F.SG' in (15). We assume that the derivational affixes used with the basic placeholder expression only cause a conversion, i.e., a change of part of speech or of grammatical gender, but they do not change the LID value.

In our analysis, the placeholder and the target agree in part of speech, valence, and content. This explains the use of derivational affixes on the placeholder: if the target is an adjective, such as *gut* 'good', it cannot directly combine with the nominal placeholder *Schlumpf*. Consequently, the placeholder first needs to combine with a derivational affixes like *-ig*. Similarly, the placeholder can impose constraints on the kinds of targets it combines with. We saw this with *you-know-WHAT* in (3a). This placeholder constraints its target to objects and is not compatible with persons.

We should briefly turn to the question whether we can relate m-placeholding to a more general morphological process. There is a similarity to the replacement of lexemes by others in taboos or euphemisms (Allan & Burridge, 1991).
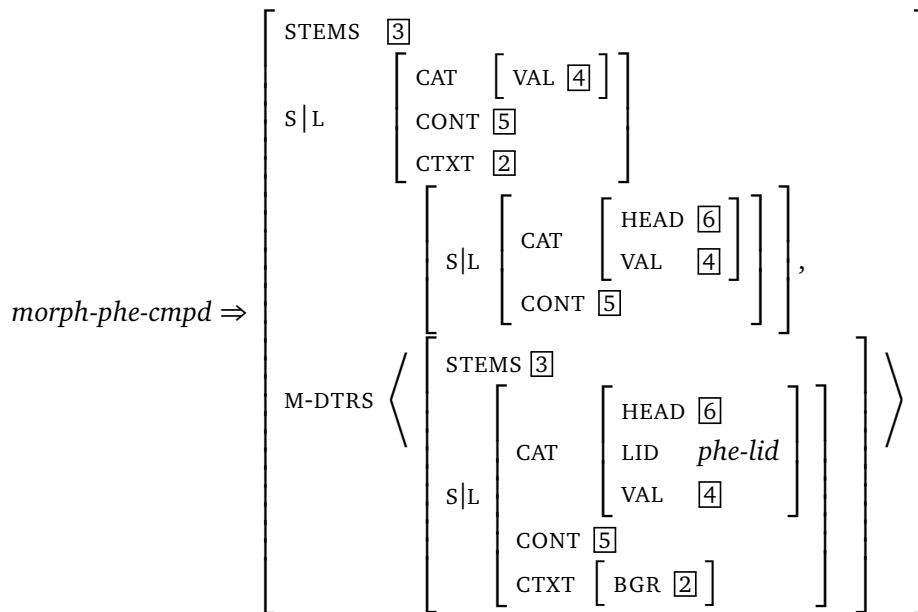
151

$$morph\text{-}phe\text{-}cmpd \Rightarrow
\begin{bmatrix}
\text{STEMS} \quad \boxed{3} \\[4pt]
\text{S}|\text{L} \begin{bmatrix}
\text{CAT} \begin{bmatrix} \text{VAL} \quad \boxed{4} \end{bmatrix} \\
\text{CONT} \quad \boxed{5} \\
\text{CTXT} \quad \boxed{2}
\end{bmatrix} \\[20pt]
\text{M-DTRS} \left\langle
\begin{bmatrix}
\text{S}|\text{L} \begin{bmatrix}
\text{CAT} \begin{bmatrix} \text{HEAD} \quad \boxed{6} \\ \text{VAL} \quad \boxed{4} \end{bmatrix} \\
\text{CONT} \quad \boxed{5}
\end{bmatrix}
\end{bmatrix} ,
\begin{bmatrix}
\text{STEMS} \boxed{3} \\[4pt]
\text{S}|\text{L} \begin{bmatrix}
\text{CAT} \begin{bmatrix} \text{HEAD} \quad \boxed{6} \\ \text{LID} \quad phe\text{-}lid \\ \text{VAL} \quad \boxed{4} \end{bmatrix} \\
\text{CONT} \quad \boxed{5} \\
\text{CTXT} \begin{bmatrix} \text{BGR} \quad \boxed{2} \end{bmatrix}
\end{bmatrix}
\end{bmatrix}
\right\rangle
\end{bmatrix}$$

Figure 5: Constraint on m-placeholding

$$
\begin{bmatrix}
inflected\text{-}word \\
\text{PHON} \left\langle schlumpf\text{-}ig\text{-}e \right\rangle
\end{bmatrix}
$$

$$
\begin{bmatrix}
m\text{-}phe\text{-}cmplx \\
\text{STEMS} \quad \boxed{8} \\
\text{HEAD} \quad \boxed{6} \\
\text{LID} \quad \boxed{1} \\
\text{VAL} \quad \boxed{7}
\end{bmatrix}
$$

$$
\begin{bmatrix}
\text{STEMS} \begin{bmatrix} \text{STEM} \quad gut \end{bmatrix} \\
\text{HEAD} \quad \boxed{6}\, adj \\
\text{LID} \quad \boxed{1}\, gut \\
\text{VAL} \quad \boxed{7}
\end{bmatrix}
\qquad
\begin{bmatrix}
derived\text{-}lxm \\
\text{STEMS} \quad \boxed{8} \begin{bmatrix} \text{STEM1} \quad schlumpf\text{-}ig \end{bmatrix} \\
\text{HEAD} \quad \boxed{6}\, adj \\
\text{LID} \quad \boxed{2} \\
\text{VAL} \quad \boxed{7}
\end{bmatrix}
$$

$$
\begin{bmatrix}
\text{STEMS} \begin{bmatrix} \text{STEM1} \quad schlumpf \end{bmatrix} \\
\text{HEAD} \quad noun \\
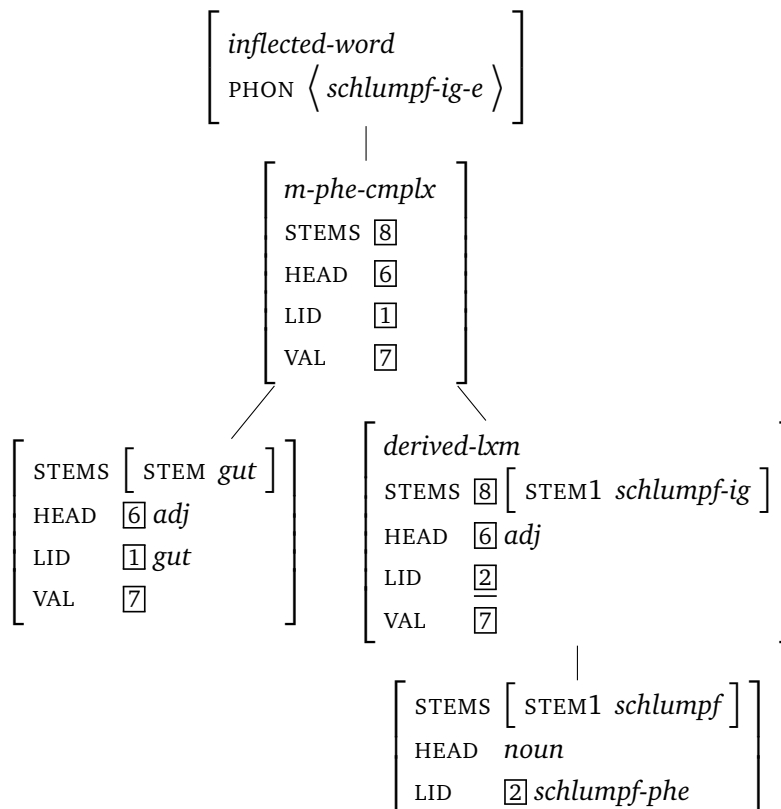\text{LID} \quad \boxed{2}\, schlumpf\text{-}phe
\end{bmatrix}
$$

Figure 6: Derivation of the word *schlumpf-ig-e*

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In German, the word *Scheiße* 'shit' is marked as vulgar. Replacing it with the phonologically similar word *Scheibe* 'disc' attenuates this marking. Allan & Burridge (1991, 15) refer to this type of lexeme replacement as *remodelling*. However, Allan & Burridge (1991) do not give examples in which such remodellings combine productively with derivational affixes.

Our analysis shows a certain parallel to the one in Cheung (2015): we assume a placeholder lexeme which does not have a lexically specified semantics. Cheung's operator **SHIFT** corresponds to our placeholder complex. Cheung (2015) needs to exclude free uses of the placeholder, i.e. uses of the placeholder not in the scope of **SHIFT**. Similarly, we need to exclude occurrences of placeholder lexemes outside placeholder complexes. This can be done with the constraint in (23). It determines that words cannot have an LID value of sort *phe-lid*. This constraint is modelled in analogy to the ban on the occurrence of non-canonical *synsem* objects in syntax.

(23) $word \Rightarrow \neg \left[\text{S}|\text{L}|\text{CAT}|\text{LID } \textit{phe-lid} \right]$

All placeholder combinations inherit their LID value from the target – see Figure 2. Consequently, the constraint in (23) exclude the occurrence of targetless placeholders in sentences.[9]

A second distributional question that we would like to address is whether there may be recursive placeholding. At first sight, it seems reasonable to exclude spurious ambiguity. In the given modelling, it is possible to combine the noun *Wunsch* 'wish' with *schlumpf* in an m-placeholder complex. The result has a non-placeholder LID value. Consequently, it could combine recursively with yet another placeholder, even *Schlumpf*. To exclude this, we can require that a placeholder needs to make a recognizable contribution in a placeholder complex. As the main function of placeholders is use conditional, we can require that the use conditional meaning of a placeholder, as collected in its BACKGROUND value, must not be included in the BACKGROUND value of the target.

This correctly excludes a redundant application of the same placeholder within one word. At the same time, it allows, in principle, the stacking of different placeholders.[10] It is conceivable that a placeholder word could be smurfed – though our database does not include such an example. This is illustrated in the constructed example in (24).

(24)   Hast du den Dings-schlumpf gesehen?
        have you the $\overline{\underline{\text{PHE-smurf}}}$ seen?

        'Did you see the WHAT-d'you-smurf-it?' (constructed)

The target of the smurfing is *Dingsbums*, which, itself is a placeholder expression. It could, for example, stand for the monster bird *Krakakass* (*Howli-*

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[9]Depending on the available types of derivation and compounding, other morphological processes may also be restricted to non-placeholder lexemes.

[10]We are grateful to Ash Asudeh (p.c.) for bringing up this point.

bird in English). Consequently, it seems to be well motivated to require a non-redundant use-conditional contribution of placeholders.

5 Conclusion

In this paper, we provided a detailed look at smurfing in German Smurf comics. We classified smurfing as an instance of placeholding and developed a formal analysis. To our knowledge, such a placeholder analysis has not been proposed previously. This treatment can give an answer to the justified question of why smurfing should be of interest for formal linguistics, given that smurfing is an artistic invention. If our approach is on the right track, smurfing relies on the placeholding possibilities of a particular language. The only "invention" is in the choice of the placeholder lexeme and its use conditions. The smurfing complexes themselves fully rely on existing placeholder formation rules of the language. Support for this assumption comes from cross-linguistic differences in smurfing, as observed, for example, for English and Modern Greek in Chatzopoulos (2008). Smurfing can provide us with a rich database for placeholding as it is much more frequent than natural occurrences of placeholding.

Our approach combines the insights of previous work on placeholding and smurfing. The integration into a sign-based framework like HPSG makes it possible to combine semantic, pragmatic, and syntactic aspects. It is eventually this formal perspective that helped us identify two types of smurfing and placeholding. This separation helps solve problems of Chatzopoulos (2008), who only looked at phonological smurfing, and Cheung (2015), whose theory is suited for morphological placeholding, but less so for phonological placeholding.

There are at least two possible future directions to explore. First, we should explore smurfing and placeholding in other languages to test the hypothesis that smurfing builds on existing placeholding processes. Related to this, it is possible that there are other types of placeholding than phonological and morphological placeholding, which we identified for German.

Second, we can go beyond placeholding. We pointed out that phonological placeholding can be considered an instance of blending. Fradin (2015) describes blending as a systematic but extra-grammatical process. We reinterpreted this in treating blending as a grammatical process, which is, however, less constrained than compounding and has a potentially non-deterministic phonology. Similarly, we would like to explore the parallelism of morphological placeholding and other processes, such as remodelling in euphemisms.

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