

Pronominal inflection and NP ellipsis in German*

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Abstract

Indefinite and possessive pronouns in German such as *ein-es* ('one') and *mein-er* ('mine') differ from their determiner counterparts in that they bear strong inflectional endings. Following Saab & Lipták (2016), I argue that this difference in inflection is due to NP ellipsis, which creates a 'stranded' affix that subsequently docks onto the determiner. Assuming that adjectives are re-attached by Local Dislocation allows us to account for the descriptive observation that the determiner and pronominal paradigms differ only in the same three exceptional cases where determiners do not bear overt inflection. Furthermore, I discuss how this approach can extend to similar data from Afrikaans, Dutch and English, as well as to split topicalization constructions in German. This analysis provides further support for Saab & Lipták's proposal that inflection emerges as a direct result of ellipsis, rather than constituting part of the licensing conditions on ellipsis (Lobeck 1995).

1 Introduction

Traditional grammars of German describe the fact that the inflectional forms of indefinite and possessive pronouns differ from the corresponding determiners. A peculiar property of this class of 'ein-words' is that they do not bear overt inflection in three exceptional cases: masculine nominative (1a) and neuter nominative and accusative (1b, c).

- (1) a. *Ein* Brief ist für dich angekommen
a-Ø letter.MASC is for you arrived
'A letter arrived for you.'
- b. Hans hat *ein* Auto bekommen
Hans has a-Ø car.NEUT received
'Hans got a car.'
- c. Das ist *ein* Gebot
that is a-Ø commandment.NEUT
'That is a commandment.'

*For helpful feedback, I would like to thank audiences at *Generative Grammatik des Südens 2017* at Leipzig University and the *31st Comparative Germanic Syntax Workshop (CGSW)* in Stellenbosch, South Africa. I am particularly grateful to three anonymous reviewers, as well as Jim Wood, for useful and challenging comments that led to considerable improvement and expansion of this paper. Further thanks also go to Katja Barnickel, Johannes Hein and Martin Salzmann for discussion of the German data.

However, the continuations of the above examples given in (2) show that pronominal forms of the relevant DPs differ from the determiners in that they must bear an overt inflectional ending.

- (2) a. ... und *ein-er* für mich auch.
 and one-MASC.NOM for me too
 ‘... and one for me too.’
- b. ... und Maria will nun auch *ein-es*.
 and Maria wants now also one-NEUT.ACC
 ‘... and now Maria wants one too.’
- c. ... und zwar *ein-es* der wichtig-st-en.
 and in.fact one-NEUT.NOM the.GEN.PL important-SPRL-GEN.PL
 ‘... in fact one of the most important ones.’

One way to deal with this fact is to simply assume that pronominal forms are distinct elements which inflect according to their own paradigm. However, this leads to significant redundancy, as the paradigms in (3) and (4) differ only with respect to three cells.

(3) <u>Indefinite article inflection:</u>	(4) <u>Indefinite pronoun inflection:</u>
MASC FEM NEUT	MASC FEM NEUT
NOM ein eine ein	NOM einer eine eines
ACC einen eine ein	ACC einen eine eines
DAT einem einer einem	DAT einem einer einem
GEN eines einer eines	GEN eines einer eines

The alternative view, taken by [Lobeck \(1995\)](#) (and originally proposed for English by [Postal 1966](#)), is to analyze ‘pronouns’ such as the one in (4b) as instances of NP ellipsis (also cf. [Roehrs 2006](#), [Lechner 2014](#), [Leu 2015](#):54, fn.19):

- (5) und Maria will nun ein*(-es) Auto

An obvious challenge for the ellipsis account is why the putative determiner has to surface with an inflectional ending that is impossible if the noun is realized overtly (6).

- (6) Ich habe ein*(-es) Auto
 I have a-NEUT.ACC car.NEUT

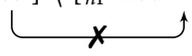
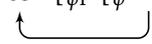
Lobeck takes this as evidence for the assumption that this inflection is actually required in order to license ellipsis of the noun (also see [Bernstein 1993](#), [Kester 1996a,b](#)). In this paper, I pursue a different approach. Rather than view a certain kind of (strong) inflection as a pre-requisite for ellipsis, I follow [Saab & Lipták \(2016\)](#) in arguing that the emergence of this non-canonical inflection on determiners is a direct result of the interaction of ellipsis with other operations in the post-syntactic component. The pronominal paradigm in (4) differs from the relevant determiner paradigm with respect to only those three cells that do not bear an overt inflectional ending. Furthermore, it is exactly these three contexts in which strong endings appear on the adjective (forming the so-called ‘mixed’ paradigm). Thus, I propose that these three exceptional

forms can be derived, rather stated in additional paradigm, by simply adding the affix that would ordinarily surface on a following adjective to these three cells.

The basic intuition behind the analysis is that the special inflection we find in NP ellipsis contexts is actually displaced adjectival inflection. Thus, in an example such as (7), the ending *-es* that would normally appear on the adjective *neu* in the ellipsis site has ‘hopped’ onto the indefinite determiner preceding the ellipsis site.

- (7) Ich habe ein neu-es Auto und du hast auch ein-es \langle neu- Auto \rangle .
 I have a new-ACC.NEUT car and you have also a-ACC.NEUT new car
 ‘I have a new car and you also have one.’

The analysis to follow assumes that adjectival inflection originates on a distinct head φ in the nominal spine, and that this head also licenses ellipsis. Furthermore, I adopt the hypothesis in [Saab & Lipták \(2016\)](#) that ellipsis can apply sufficiently early on the PF branch to bleed other processes such as Lowering of affixes to their hosts (8a,b). When this happens, the stranded affix is reattaches to non-canonical host, i.e. the indefinite determiner, via Local Dislocation (8c).

- (8) a. $[_{DP} \text{ein} [_{\varphi} [\varphi \text{-es}] \langle [_{nP} \text{neu} [_{nP} n \text{Auto}]] \rangle]]$ (NP ellipsis)
 b. $[_{DP} \text{ein} [_{\varphi} [\varphi \text{-es}] \langle [_{nP} \text{neu-} [_{nP} n \text{Auto}]] \rangle]]$ (Lowering)

 c. $[_{DP} \text{ein-es} [_{\varphi} [\varphi] \langle [_{nP} \text{neu-} [_{nP} n \text{Auto}]] \rangle]]$ (Local Dislocation)


Thus, pronominal forms exist only as a consequence of NP ellipsis. Furthermore, this analysis treats the exceptionality of pronominal forms such as *eines* as the result of a repair to a stray affix configuration. This therefore allows us to dispense with an additional paradigm for pronominal *ein*-words and significantly simplify our assumptions about the inventory of German inflection.

The paper is structured as follows: Section 2 presents the core facts surrounding pronominal inflection in German. Section 3 presents the case for analyzing pronominal forms as instances of NP ellipsis, discussing additional evidence for this claim based on relative clause selection ([Brandt & Fuß 2014](#)). The classic approach by [Lobeck \(1995\)](#) involving inflection as a licenser of ellipsis is reviewed, followed by discussion of the recent alternative proposal by [Saab & Lipták \(2016\)](#), who argue that strong inflection can instead be viewed as a result of NP ellipsis. Section 4 provides an analysis of pronominal forms in German. It begins by first laying out detailed assumptions about the architecture of the nominal domain in German, including the locus of strong and weak inflection, as well as novel arguments for an AP-over-NP structure in adjectival modification. It is shown that the fact that only determiners which themselves lack overt inflection can host adjectival inflection in NP ellipsis contexts follows from the independently-assumed linearity of Local Dislocation ([Embick & Noyer 2001](#)). Section 5 discusses how this approach extends to similar contexts in Dutch and Afrikaans, as well as *one*-anaphora in English and split topicalization in German. Finally, Section 6 concludes.

2 Nominal inflection in German

2.1 Strong vs. weak inflection

Broadly speaking, nominal inflection in German makes a distinction between so-called ‘strong’ and ‘weak’ inflectional endings (e.g. Milner & Milner 1972; Zwicky 1986; Gallmann 1996; Eisenberg 2000; Helbig & Buscha 2001; Müller 2002a; Roehrs 2006, 2009, 2015; Corbett 2006; Roehrs & Julien 2012). The paradigm for the strong endings is given in (9) and the weak endings are shown in (10).

<p>(9) <u>Strong inflection (I):</u></p> <table style="width: 100%; border-collapse: collapse; border-top: 1px solid black; border-bottom: 1px solid black;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 15%;">MASC</th> <th style="width: 15%;">FEM</th> <th style="width: 15%;">NEUT</th> <th style="width: 15%;">PL</th> </tr> </thead> <tbody> <tr> <td>NOM</td> <td>-er</td> <td>-e</td> <td>-es</td> <td>-e</td> </tr> <tr> <td>ACC</td> <td>-en</td> <td>-e</td> <td>-es</td> <td>-e</td> </tr> <tr> <td>DAT</td> <td>-em</td> <td>-er</td> <td>-em</td> <td>-er</td> </tr> <tr> <td>GEN</td> <td>-es</td> <td>-er</td> <td>-es</td> <td>-er</td> </tr> </tbody> </table>		MASC	FEM	NEUT	PL	NOM	-er	-e	-es	-e	ACC	-en	-e	-es	-e	DAT	-em	-er	-em	-er	GEN	-es	-er	-es	-er	<p>(10) <u>Weak inflection (II):</u></p> <table style="width: 100%; border-collapse: collapse; border-top: 1px solid black; border-bottom: 1px solid black;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 15%;">MASC</th> <th style="width: 15%;">FEM</th> <th style="width: 15%;">NEUT</th> <th style="width: 15%;">PL</th> </tr> </thead> <tbody> <tr> <td>NOM</td> <td>-e</td> <td>-e</td> <td>-e</td> <td>-en</td> </tr> <tr> <td>ACC</td> <td>-en</td> <td>-e</td> <td>-e</td> <td>-en</td> </tr> <tr> <td>DAT</td> <td>-en</td> <td>-en</td> <td>-en</td> <td>-en</td> </tr> <tr> <td>GEN</td> <td>-en</td> <td>-en</td> <td>-en</td> <td>-en</td> </tr> </tbody> </table>		MASC	FEM	NEUT	PL	NOM	-e	-e	-e	-en	ACC	-en	-e	-e	-en	DAT	-en	-en	-en	-en	GEN	-en	-en	-en	-en
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As a rule of thumb, the first element in the adjective phrase bears the strong ending, and any subsequent elements (e.g. adjectives) bear the weak endings. This is sometimes referred to as the *Principle of Monoinflection* (see e.g. Roehrs 2009:135; Schäfer 2016:290). The paradigm in (11) shows that definite and demonstrative determiners inflect following the strong paradigm in (9).

(11) Definite determiner inflection:

	MASC	FEM	NEUT	PL
NOM	dies-er	dies-e	dies-es	dies-e
ACC	dies-en	dies-e	dies-es	dies-e
DAT	dies-em	dies-er	dies-em	dies-en
GEN	dies-es	dies-er	dies-es	dies-er

Adjectives following either definite or demonstrative determiners inflect according to the weak paradigm (12).

(12)

a.	d-er	gut-e	Wein
	the-MASC.NOM.I	good-MASC.NOM.II	wine.MASC
b.	Mit dies-em	gut-en	Wein
	with this-MASC.DAT.I	good-MASC.DAT.II	wine.MASC
	‘with this good wine’		

However, bare adjectives are marked with strong endings as can be seen in (13).

(13)

a.	gut-er	Wein
	good-MASC.NOM.I	wine.MASC
	‘good wine’	
b.	Mit gut-em	Wein
	with good-MASC.DAT.I	wine.MASC

‘with good wine’

There is another class of determiners that inflect differently, however. These are typically referred to as ‘*ein*-words’ and include the indefinite article *ein*- and its negative counterpart *kein*-, as well as possessive determiners such as *mein*- ‘my’, *dein*- ‘your’ and *sein*- ‘his’ (the latter two cases seem to be morphologically derived from the former, see Roehrs 2009:148, fn.27).¹ These do not bear an overt inflectional marker in three exceptional cases: masculine nominative and neuter nominative and accusative, as can be seen in (14) and (15) (cf. Durrell 1979:67, Lobeck 1995:103, Gallmann 2004:152, Leu 2008:58, Roehrs 2009:125).²

(14)	<i>Indefinite determiner inflection:</i>			(15)	<i>Possessive determiner inflection:</i>		
	MASC	FEM	NEUT		MASC	FEM	NEUT
NOM	ein	eine	ein	NOM	mein	meine	mein
ACC	einen	eine	ein	ACC	meinen	meine	mein
DAT	einem	einer	einem	DAT	meinem	meiner	meinem
GEN	eines	einer	eines	GEN	meines	meiner	meines

Another quirk of these items is that strong endings unexpectedly appear on adjectives following *ein*-words in the three special contexts in (14) and (15) where no overt inflection is present on the determiner. This is shown by the examples in (16).

- (16) a. Ein gut-er Wein
a-Ø good-NOM.MASC.III wine.MASC
‘A good wine’
- b. Ein schnell-es Auto
a-Ø fast-NOM.NEUT.III car.NEUT
‘A fast car’

The exceptional cases in (16) give rise to the so-called ‘mixed’ paradigm in (17).

¹As an anonymous reviewer points out, there are complications with the view that negative indefinites such as *k-ein* and possessives such as *m-ein* are built directly from the indefinite article *ein*. One such issue is the fact that the latter cases differ from indefinite *ein* in that they allow plural forms, whereas indefinite plurals are impossible. It is worth noting that there are some differences between singular and plural uses of *kein*. For example, Kratzer (1995) notes that singular *kein*-phrases are possible individual-level predicates (ia), but plural ones are not (ib). She takes this as evidence that the *k*- morpheme corresponds to DP-external sentential negation with plurals only.

- (i) a. weil kein Arzt altruistisch ist
because no doctor altruistic is
‘because no physician is altruistic’
- b. *weil kein-e Ärzt-e altruistisch sind
because no-PL doctor-PL altruistic are
‘because no physicians are altruistic’ (Kratzer 1995:146f.)

Since the inflectional patterns of *ein* and *mein/kein* do not differ in the cases relevant to this article, I will not pursue this issue further here (see Leu 2015:166ff. for pertinent discussion).

² It still remains a controversial issue whether these three exceptional cases constitute a null suffix, or simply the lack of inflection altogether (see Roehrs 2009:138,fn.9 for references and discussion). Since this does not affect the analysis to follow, I will not discuss this issue here.

(17) *Mixed inflection (III):*

	MASC	FEM	NEUT	PL
NOM	-er	-e	-es	-en
ACC	-en	-e	-es	-en
DAT	-en	-en	-en	-en
GEN	-en	-en	-en	-en

It is worth noting that the mixed paradigm is essentially the weak paradigm with three exceptional cells imported from the strong paradigm. It has not gone unnoticed that the exceptional cases in the mixed paradigm in (16) and the ‘*ein*-word’ paradigm in (14) and (15) overlap (e.g. [Schoorlemmer 2009:237f.](#)), suggesting that strong agreement is, in some sense, ‘displaced’ in these contexts.

2.2 Pronominal inflection

Descriptively, pronominal forms for indefinites and possessives inflect according to different paradigms to their determiner equivalents (cf. [Helbig & Buscha 2001:235](#); [Durrell 2002:90](#); [Gallmann 2004:152f.](#); [Engel 2004](#); [Duden 2009:950](#); [Schäfer 2016:285f.](#)). Comparing (18) and (19), it becomes clear that the indefinite pronoun forms differ from those for the indefinite article with regard to the same three exceptional contexts in which we find no inflection on the determiner and mixed adjectival inflection on adjectives.

(18) <i>Indefinite article inflection:</i>	(19) <i>Indefinite pronoun inflection:</i>																																								
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ACC	einen	eine	eines																																						
DAT	einem	einer	einem																																						
GEN	eines	einer	eines																																						

This can be seen more clearly in the following examples:

(20) Peter hat *ein* schön-es Haus. Ich will auch so *ein-es*.
 Peter has a-Ø beautiful-ACC.NEUT house I want also such a-ACC.NEUT
 ‘Peter has a beautiful house. I want one like it.’

(21) Ich dachte, dass ein Hund das Geräusch gemacht hat, aber da war
 I thought that a-Ø dog the noise made has but there was
 k-ein-er.
 NEG-a-NOM.MASC
 ‘I thought that a dog made the noise, but there wasn’t one there.’

The same is true of possessive pronouns, which have a different form to the corresponding possessive determiners (22).

- (22) a. Das ist nicht dein Buch, sondern mein Buch.
 that is not your-Ø book but my-Ø book
- b. Das ist nicht *dein* Buch, sondern *mein-es*.
 that is not your-Ø book but my-ACC.NEUT
 ‘That is not your book, it’s mine.’ (Duden 2009:950)
- c. *Ihr* Freund ist verreist, *mein-er* bleibt hier.
 her-Ø friend is left my-NOM.MASC stays here
 ‘Her friend has left, mine is staying here.’ (Eisenberg 2000:163)

These exceptional pronominal forms are also found in possessive constructions corresponding to the English *one of ...* -construction:

- (23) a. Das ist *ein-es* von *mein-en* Büch-ern.
 that is a-NOM.NEUT of my-DAT.PL book-DAT.PL
 ‘That is one of my books.’
- b. Das ist *ein-er* *mein-er* Freund-e.
 that is a-NOM.MASC my-GEN.PL friend-PL
 ‘That is one of my friends.’ (Durrell 2002:91)

The question now is whether one can derive the relevant differences in the pronominal paradigm rather than simply re-state them. It is almost certainly not accidental that the three anomalous cells in the paradigm for possessive *ein*-words in (19) are the same as those with the exceptional null ending in the determiner paradigm (18). Furthermore, recall that adjectives following *ein*-words in these three contexts take strong endings (according to the ‘mixed’ paradigm). Thus, we can derive the exceptional forms of the pronominal paradigm as described in (24).

- (24) *Generalization about the pronominal paradigm:*
 Adding the corresponding adjectival endings to three uninflecting contexts in the *ein*-word paradigm yields the pronominal paradigm.

On a descriptive level, we can therefore derive the unexpected forms of pronouns such as (*m*)-*ein-er* and (*m*)-*ein-es* via the amalgamation of the three exceptional cases with null endings in the indefinite determiner paradigm and the corresponding ‘strong’ endings from the mixed adjectival paradigm, as illustrated in Figure 1 below.

<i>Indefinite article inflection:</i>					<i>Mixed adjectival inflection:</i>				<i>Indefinite pronoun inflection:</i>				
	MASC	FEM	NEUT		MASC	FEM	NEUT		MASC	FEM	NEUT		
NOM	ein-	eine	ein-	+	NOM	-er	-e	-es	⇒	NOM	einer	eine	eines
ACC	einen	eine	ein-		ACC	-en	-e	-es		ACC	einen	eine	eines
DAT	einem	einer	einem		DAT	-en	-en	-en		DAT	einem	einer	einem
GEN	eines	einer	eines		GEN	-en	-en	-en		GEN	eines	einer	eines

Figure 1: Deriving the pronominal paradigm

This analytical step allows us to dispense with the assumption of a dedicated paradigm for pronominal forms. However, there still remains the question to achieve the result that adject-

tival inflection appears on a putative determiner in pronominal contexts. I will argue that this can be made to follow if we view *ein*-words on a par with cases of NP ellipsis, such as (25).

- (25) Ich habe ein neu-es Auto und du hast ein alt-es \langle Auto \rangle .
 I have a new-ACC.NEUT car and you have a old-ACC.NEUT car
 ‘I have a new car and you have an old one.’

In a parallel approach to pronominal forms, an example such as (22c) would be re-analyzed as containing an elided noun (cf. [Lobeck 1995](#)):

- (26) *Ihr* Freund ist verreist, *mein-er* \langle Freund \rangle bleibt hier.
 her-Ø friend is left my-NOM.MASC friend stays here
 ‘Her friend has left, mine is staying here.’

However, this assumption alone still offers no explanation for the presence of strong inflection on the determiner, which is never possible with an overt noun complement (**meiner Freund*). Lobeck’s answer to this was that morphology, in particular strong inflection, plays a central role in licensing ellipsis in cases such as (26). This is a claim that I will challenge in the remainder of this article. Instead, the analysis I propose involves the assumption that the syntactic projection hosting adjectival inflection (φ P) is left stranded by ellipsis of the NP. When no adjective is present, φ would ordinarily fuse with *n* and be spelled out as null. However, NP ellipsis applies early enough to block this Lowering operation (27b). As a result, a later operation in the PF component attaches the affixal head to the nearest available host, the determiner (27c). Once adjoined, this head is realized as a strong inflectional ending on the determiner (27d).

- (27) a. [_{DP} mein [_{φ P} φ \langle [_{nP} *n* Freund] \rangle]] (*NP ellipsis*)
 b. [_{DP} mein [_{φ P} φ \langle [_{nP} *n* Freund] \rangle]] (*Lowering blocked*)

 c. [_{DP} mein- φ [_{φ P} \langle [_{nP} *n* Freund] \rangle]] (*Local Dislocation*)

 d. [_{DP} mein-er [_{φ P} \langle [_{nP} *n* Freund] \rangle]] (φ realized as strong inflection)

A crucial aspect of the analysis is that Local Dislocation can only apply in cases where Lowering is blocked by ellipsis. As will be shown in Section 4, there is an inherent phonological adjacency constraint on Local Dislocation (e.g. [Embick & Noyer 2001](#); [Embick 2007b](#)), which will result in this stranded affix only being able to attach to the determiners with null endings. This captures the fact that one can derive the pronominal paradigm by adding the relevant adjectival endings only to uninflected determiners, as shown in Figure 1.

Before presenting the details of this analysis, the following section reviews some evidence from relative clause selection that pronominal forms involve ellipsis. Subsequently, Lobeck’s classic licensing approach is reviewed and discussed. Finally, I turn to the more recent approach by [Saab & Lipták \(2016\)](#), who view inflection as a consequence of, rather than a precondition for ellipsis.

3 Deriving pronominal forms from NP ellipsis

The observation that German pronominal forms resemble cases of NP ellipsis was made by [Lobeck \(1995\)](#) and [Wiltschko \(1998\)](#) (also see [Perlmutter 1970](#); [Elbourne 2001](#) and Section 5.2 for *one*-anaphora). As we have seen, indefinite determiners such as *ein* have null inflection (28a) in three exceptional cases, however when the noun complement of the determiner is missing, it shows obligatory strong inflection (28b).

- (28) a. Ich sah viele ihr-er Bücher und ein*(-es) Buch war sehr teuer.
 I saw many her.GEN.PL books and one*(-NEUT) book was very expensive
- b. Ich sah viele ihr-er Bücher und ein*(-es) <Buch> war sehr teuer.
 I saw many her.GEN.PL books and one*(-NEUT) book was very expensive
 ‘I saw many of her books and one (book) was very expensive.’
- ([Lobeck 1995:119](#))

Before moving on to discuss possible analyses, let us consider some supporting evidence from relative clause selection that pronominal forms contain an elided noun.

3.1 Evidence from relative clause selection

This section will introduce a potential diagnostic to show that putatively pronominal *ein*-words do in fact contain an elided lexical noun. First, consider the fact that relative pronouns in German normally take the form of the definite determiner, agreeing in gender and number with the head noun that it modifies (29).

- (29) a. [_{DP} Das Buch [_{CP} *das* ich gestern gelesen habe]]
 the book.NEUT.SG that.NEUT.SG I yesterday read have
 ‘the book that I read yesterday’
- b. [_{DP} die Frau [_{CP} *die* ich gestern getroffen habe]]
 the woman.FEM.SG that.FEM.SG I have yesterday met
 ‘the woman that I met yesterday’

However, there is generalization going back to [Behaghel \(1928\)](#) that, if the relative clause does not modify a DP containing a lexical noun, the relative operator takes the ‘default’ form *was*. This can be seen with free relative clauses in (30), and also with relative clauses modifying quantifiers such as *alles* (‘everything’) and *nichts* (‘nothing’) (31a,b) and nominalized adjectives (31c).³

- (30) [_{CP} Was / *das du gekocht hast] ist schimmelig
 what / *that you cooked have is mouldy
 ‘What you cooked is mouldy.’
- ([van Riemsdijk 2006:353](#))

³Note that these words are grammatically neuter and can license neuter adjectival agreement (ia), as well as neuter pronouns (ib). Thus, we would in principle expect *das* to be a possible form for the relative pronoun.

- (i) a. das absolute Nichts b. Alles hat seine Zeit
 the.NEUT absolute nothing everything has its.NEUT time
 ‘absolute nothingness’ ‘There is a time for everything.’

- (31) a. [DP Nichts [CP was / *das mir Sorgen macht]]
nothing what *that me.DAT worries makes
‘nothing that worries me’
- b. [DP Alles [CP was / *das man über die Linguistik wissen muss]]
everything what *that one about the linguistics know must
‘Everything you need to know about linguistics’
- c. Geschenksideen sind [DP das Einzige [CP was / *das es hier massenweise
present.ideas are the only what *that EXPL here en.masse
gibt]]
gives
‘Ideas for presents are the only thing that you get here en masse.’
- (Brandt & Fuß 2014:311)

Brandt & Fuß (2014) refer to this as *Behagel’s generalization*, as given in (32).

- (32) *Behagel’s generalization* (Brandt & Fuß 2014:305):
Was replaces *das* in relatives that lack a proper nominal antecedent.

Assuming that this generalization is reliable, then it can function as a diagnostic to test whether pronouns such as (*k*)*eines* contain an elided noun or not. Indeed, it seems that the overall tendency is that pronominal forms do not pattern with the NP-less contexts in (31) in that they are not compatible with modification by *was*-relatives (33).

- (33) a. Es war ein Foul, aber *k-ein-es*, das mich heute noch stark beeinträchtigt.⁴
it was a-Ø foul but NEG-a-AGR that me today still strongly hinders
‘It was a foul, but not one that still really affects me today.’
- b. Ein zu kleines Ziel ist *ein-es*, das Sie nicht fordert.⁵
a-Ø too small goal is a-AGR that you not challenges
‘A goal that is too small is one that does not challenge you.’

However, it is important to note that while the distinction between the contexts for *was*- and *das*-relatives is often not categorical, the overall trend still supports this conclusion. Brandt & Fuß (2014) carried out a large-scale corpus study, with some of their results given in (34). They found that the relevant pronominal forms such as *kein* and *ein* pattern with their counterparts containing a full NP in overwhelmingly preferring modification by *das*-relatives. On the other hand, the disparity between *das Einzige* and *das einzige NP* would seem to suggest that the former does not contain an elided noun. The same conclusion holds for *alles* and *nichts*.⁶

⁴URL: <http://www.faz.net/aktuell/sport/zitate-des-tages-glanzstuecke-und-kapriolen-11636441/sagen-wir-es-mal-so-es-war-14110978.html> [accessed 26.05.16]

⁵Oliver Kahn, *Ich. Erfolg kommt von innen* (2008, Riva Verlag)

⁶As an anonymous reviewer points out, there are some nouns that seem to show more variable behaviour than others. For example, Brandt & Fuß (2014:313) report that *etwas* (‘something’) shows a rather even split between *das*-relatives ($n = 5473$) and *was*-relatives ($n = 4167$) in the raw data found in their corpus search. They suggest that this is due to the different parses of *etwas* as a nominal (*das gewisse Etwas* ‘a certain something’) or adjective (*etwas Oregano* ‘some oregano’). Variability with regard to nominalized adjectives such as *das Beste* (‘the best’) could indicate that some speakers employ a ‘deep ellipsis’ parse to NPE with a base-generated proform (see e.g. Wurmbrand 2017).

(34) *Relative frequencies of was- and das-relatives in German* (Brandt & Fuß 2014:312f.):

	Antecedent	<i>das</i>	<i>was</i>	Ratio	Preference
<i>eines</i>	‘one’	1500	50	30:1	<i>das</i> -relative
<i>ein NP</i>	‘an NP’	70.000	300	233:1	<i>das</i> -relative
<i>keines</i>	‘none’	117	4	29:1	<i>das</i> -relative
<i>kein NP</i>	‘no NP’	1845	60	30:1	<i>das</i> -relative
<i>das Einzige</i>	‘the only thing’	621	4412	1:7	<i>was</i> -relative
<i>das einzige NP</i>	‘the only N’	2048	50	41:1	<i>das</i> -relative
<i>alles</i>	‘everything’	42	34211	1:814	<i>was</i> -relative
<i>nichts</i>	‘nothing’	307	3241	1:10	<i>was</i> -relative

With regard to relative clause selection, so-called *ein*-words pattern like DPs containing an overt lexical NP, rather than other nominals *alles* and *das Einzige*, which presumably lack a head noun. This correlation then supports the idea that an (elided) lexical noun is syntactically present, as in (35), to which the relevant rules governing relative clause selection are sensitive.

(35) ... [DP [DP *ein-es* < [NP Ziel] >] [CP *das* ...]]

3.2 NP ellipsis licensed by strong agreement (Lobeck 1995)

Lobeck (1993, 1995) claimed that NP ellipsis is licensed by strong agreement (also cf. Torrego 1985; Bernstein 1993; Kester 1996a; Panagiotidis 2003; Ticio 2010). In particular, Lobeck views ellipsis sites as empty categories (i.e. *pro*) and proposed the following licensing condition for ellipsis sites:

(36) *Licensing and identification of pro* (Lobeck 1995:4):

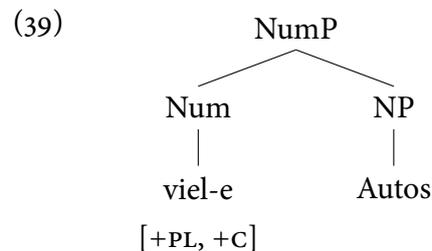
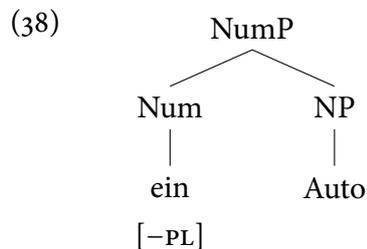
An empty, non-arbitrary pronominal [i.e. ellipsis site] must be properly head-governed, and governed by an X⁰ specified for strong agreement.

To illustrate, this consider the examples in (37). As we have seen, indefinite determiners do not take an ending in accusative neuter contexts. However, if the noun is elided, the determiner must bear the strong inflectional ending *-es* that we usually find on the adjective.

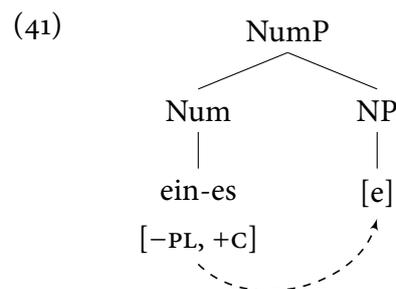
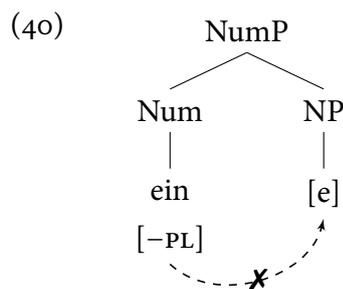
(37) A: Peter hat ein-Ø alt-es Auto gekauft
 Peter has a-ACC.NEUT old-ACC.NEUT
 ‘Peter bought an old car.’
 B: *Hat Maria auch ein-Ø <Auto> gekauft?
 has Maria also a-ACC.NEUT bought
 ‘Has Maria also bought one?’
 B’: Hat Maria auch ein-es <Auto> gekauft?
 has Maria also a-ACC.NEUT bought
 ‘Has Maria also bought one?’

(Lobeck 1995:114)

Following the condition in (36), a terminal must bear what Lobeck calls ‘strong agreement features’ in order to license an ellipsis site. In this account, case features (among others) count as a strong features. The determiner *ein* in *ein Auto* in (37), assumed to head a NumP, only bears a [-PL] feature, but no strong agreement features such as case (38) (Lobeck 1995:114). An inflected determiner such as *viele* in *viele Autos* (‘many cars’), on the other hand, would have a strong agreement feature for case (39).



Since *ein* lacks strong features, it cannot license the ellipsis site in its complement (40). However, the inflected form *ein-es* does have a strong case (+C) feature under Lobeck’s assumptions (1995:121) and can therefore license the ellipsis site (41).



This means that whenever *ein* is adjacent to an ellipsis site, it must take an exceptional inflectional form in order for the ellipsis site to be possible. This analysis raises a number of questions, however. For example, we have to assume that *eines* is a potential form for the indefinite determiner in neuter nominative/accusative contexts, even though we never observe this outside of ellipsis constructions. It is unclear how this form can be blocked from occurring more generally (e.g. **eines Buch*), since it is also more specific in its featural composition, than the non-agreeing form *ein*. Most current theories of morphology (e.g. Distributed Morphology; Halle & Marantz 1993) would predict that the more specific *eines* should be favoured over *ein*, if it is indeed a competing form for the determiner. In addition, there is a sense of arbitrariness about which features are assumed to constitute ‘strong features.’ For example, in English *each* can license NP ellipsis (42a), whereas *every* does not (42b).

- (42) a. The women came in and [DP each < [NP woman] >] sat down.
 b. *The women came in and [DP every < [NP woman] >] sat down.

(Lobeck 1995:93)

Despite there being no obvious difference in surface agreement, Lobeck was forced to stipulate

that *each* ‘strongly agrees’ with its complement, licensing NP ellipsis, whereas *every* does not (see Merchant to appear).

Another argument for strong inflection licensing NP ellipsis comes from a particular class of adjectives. In German, a subset of colour-denoting adjectives, such as *lila* (‘purple’) and *rosa* (‘pink’), allow for either null or strong adjectival inflection (also see Sleeman 1996; Ott 2012; Roehrs 2015; Saab & Lipták 2016) (43).

- (43) a. ein lila Kleid
a purple dress
- b. ein lila-nes Kleid
a purple-AGR dress
‘a purple dress’ (Muysken & van Riemsdijk 1985:26)

However, this optionality disappears in cases of NP ellipsis such as (44), where only the strong ending is possible.

- (44) Wenn ich ein Kleid tragen muss, dann lieber ein lila*(-nes) ⟨Kleid⟩
if I a dress wear must then rather a purple*(-AGR) dress
‘If I have to wear a dress, than I’d rather wear a purple one.’

Thus, there seems to be an undeniable connection between inflection and NP ellipsis, however the crucial question to be answered is the directionality of relation, i.e. does inflection license ellipsis or *vice versa*? The former view is taken by Lobeck (1995) who proposes that strong agreement/inflection is a pre-requisite for ellipsis, however we have seen in this section that there are theoretical problems with this approach. In the following section, I review a recent approach by Saab & Lipták (2016) that rejects the assumption that the strength of agreement/inflection directly licenses ellipsis. Instead, they claim that the exceptional forms of the determiner we find in NPE contexts follows directly from the interaction of ellipsis with other operations in the postsyntactic component.

3.3 Ellipsis and stranded affixes (Saab & Lipták 2016)

Saab & Lipták (2016) reconsider Lobeck’s generalization that NP ellipsis requires strong agreement. They discuss an example from Hungarian, where inflectional endings that normally only ever appear on nouns can surface on adjectives when the noun is elided. On the surface, this is similar to the German cases above in that an element exhibits non-canonical inflection only when adjacent to an ellipsis site. First, consider that nouns, but not adjectives, are marked for plural in Hungarian DPs (45) (also cf. Dékány 2011).

- (45) a. az új ház-ak
the new house-PL
- b. *az új-ak ház-ak
the new-PL house-PL
- c. *az új-ak ház
the new-PL house

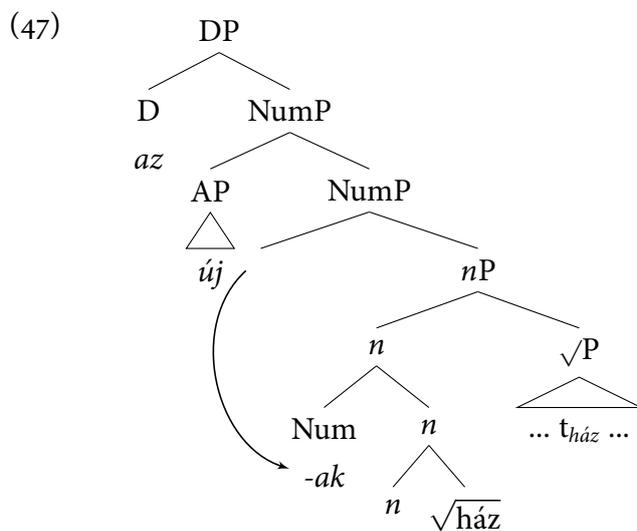
‘the new houses’

(Saab & Lipták 2016:83)

If the noun is elided, however, the number marking we would normally find on the noun appears to have ‘shifted’ to the adjective (46) (cf. (45b)).

- (46) Mari a régi kis ház-ak-at látta. Én az új-ak-at (ház[-ak-at])
 Mari the old all house-PL-ACC saw I the new-PL-ACC
 ‘Mari saw the old small houses. I saw the new ones.’ (Saab & Lipták 2016:84)

The analysis of the inflectional pattern in (45a) proposed by Saab & Lipták (2016) is that number marking originates in a separate Num projection above *n*P and is fused with the lexical root+*n* complex (created by syntactic head movement) via the postsyntactic operation of Lowering (Embick & Noyer 2001; Embick 2007b) as shown in (47).



In NP ellipsis contexts, an $[E_N]$ feature on Num triggers ellipsis of its complement, *n*P, at PF (cf. Merchant 2014). Saab & Lipták (2016) then also assume that ellipsis can bleed other postsyntactic processes such as the Lowering operation in (47). They propose the following generalization:

- (48) *Ellipsis-Morphology (Elmo) Generalization:*
 For every morphological operation MO that affects the domain of X, where X contains the target of MO, MO cannot apply in X if X is subject to ellipsis.

Since Lowering is a ‘downward’ operation, it targets the closest *c*-commanded head in its complement domain. This is also the domain that can be elided, and as a result there is a potential bleeding interaction if ellipsis first removes the relevant head. This is exactly what Saab & Lipták (2016) assume. In an NP ellipsis derivation, the complement of Num in (49) is elided at PF (indicated by the dashed box) and, subsequently, Lowering of Num to *n* cannot apply since *n* is no longer accessible.⁷ In this case the plural affix is ‘stranded’ and must be realized on a different

⁷As an anonymous reviewer points out, the $[E]$ -feature is often conceived of as an instruction to PF to leave the complement of the head on which it resides unparsed (e.g. Merchant 2004:671). As such, one might imagine that the syntactic structure should potentially still be available for postsyntactic operations, even though this structure remains unpronounced. Thus, the Elmo-Generalization in (48) requires that ellipsis behaves more like the traditional

as Local Dislocation, that a language can use to repair this configuration. In the following section, I will show how this approach can be utilized to derive the seemingly exceptional pronominal forms of *ein*-words that we find in German.

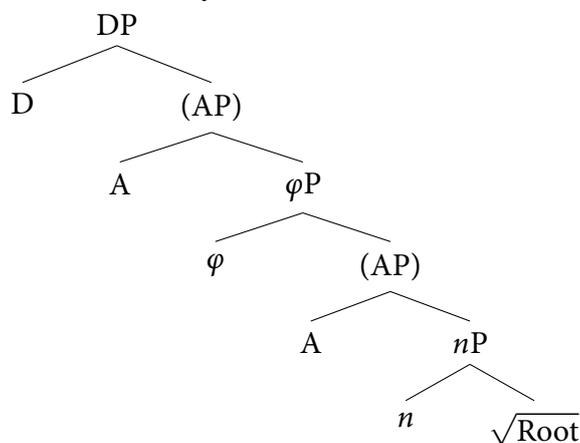
4 Analysis

This section provides an analysis of how the pronominal paradigm can be derived by reassociation of an affix stranded by NP ellipsis. First, some basic assumptions about the structure of the nominal domain in German will be presented, in particular a defence of the head (rather than phrasal) status of adjectives, before going on to show the derivations of pronominal forms.

4.1 The architecture of DP

I make the following assumptions about the syntactic structure of the noun phrase in German: I adopt an articulated structure of the nominal domain (cf. Abney 1987; Alexiadou 2001, 2014; Coene & D’hulst 2002; Alexiadou et al. 2007), comprising of a determiner phrase DP; and a categorizing head *n* that combines with the lexical root. Furthermore, I posit an intermediate projection φ P hosting features for person, number and gender, which is responsible for inflection on the adjective.⁸ Adjectives can be merged either above or below this φ P projection. Taken together, this yields the structure in (52).

(52) Basic structure of DP:



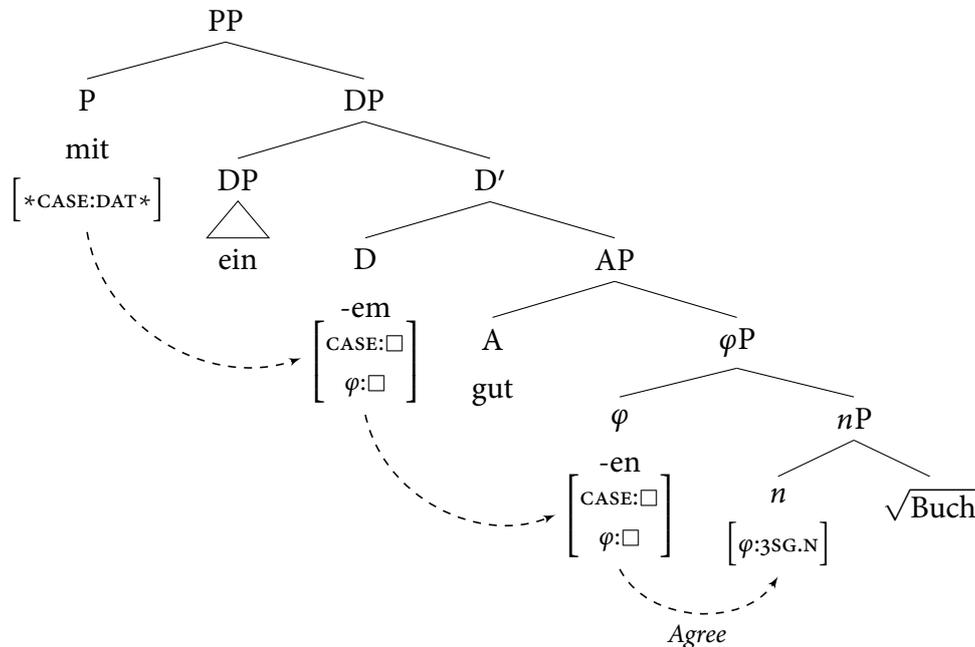
It is assumed that determiners, including *ein*-words, are base-generated in Spec-DP (e.g. Gallmann 1996; Lindauer 1998; Demske 2001; Müller 2002a) and their case inflection is realized on D, which receives case features from an external case assigner (Abney 1987; Olsen 1989, 1991a,b). Furthermore, I propose a series of feature-sharing dependencies between the D, φ and *n* heads (Pesetsky & Torrego 2007, as well as Schoorlemmer 2009 for German). In particular, case is assigned to the D head, whereas the φ -features associated with the lexical root are situated on *n*.

⁸This can be thought of as a composite projection corresponding to distinct projections such as NumP (Ritter 1991, 1992) or GenP (Piccolo 1991) in the literature. It seems that one could decompose this projection and nothing fundamental about the analysis would change, but I will refrain from doing so for present purposes.

The Agree dependencies in (54) ensure that both D and φ bear the relevant case features required to determine the correct inflectional endings.

(53) mit ein-em gut-en Buch
with a-DAT.NEUT good-DAT.NEUT book

(54) *The architecture of DP (syntax):*



In this system, the D head hosts strong endings and the φ head hosts weak inflection. As the following section will show, the strong ending attaches to the closer determiner in Spec-DP, and the weak endings dock onto neighbouring adjectives, if any are present. This corresponds to the well-known descriptive principle in (55).

(55) *Principle of Monoinflection* (Roehrs 2009:135):

The first element within a noun phrase carries the strong and the second one the weak ending.

There are some exceptional cases, e.g. *ein*-words and determinerless DPs, where the locus of strong/weak inflection seems to differ. These will be discussed in Section 4.5 below.

4.2 Post-syntactic processes in the DP

At PF, the strong and weak inflectional endings *-em* and *-en* are inserted into the D and φ terminals, respectively. Subsequently, the affixes hosted in D and φ must be attached to a host. Standard approaches to Distributed Morphology (e.g. Halle & Marantz 1993; Harley & Noyer 2003; Embick & Noyer 2007; Nevins 2015) envisage two main postsyntactic operations to achieve this; *Lowering* and *Local Dislocation*. They are defined by Embick & Noyer (2007:319) as follows:

(56) *Two operations at PF:*

- a. Before linearization: The derivation operates in terms of hierarchical structures. Consequently, a movement operation that applies at this stage is defined hierarchically. This movement is *Lowering*; it lowers a head to the head of its complement.
- b. After linearization: The derivation operates in terms of linear order. The movement operation that occurs at this stage, *Local Dislocation*, operates only in terms of linear adjacency, not hierarchical structure.

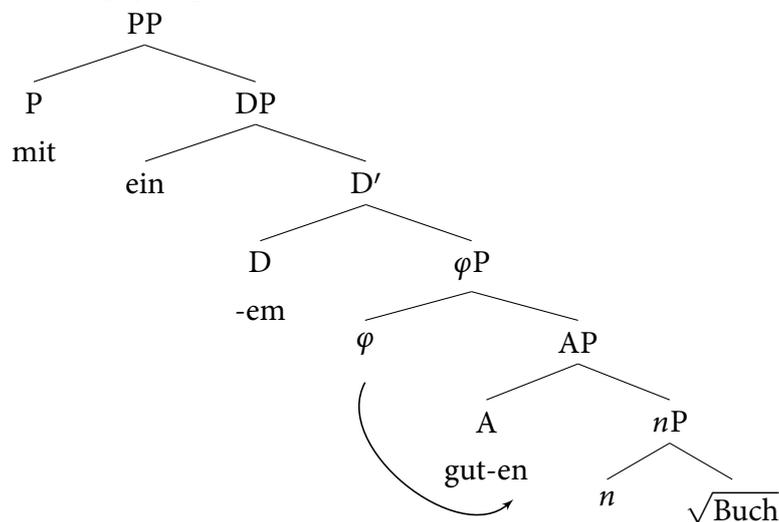
As is clear from the above definitions, there are intrinsic factors determining the relative of order in which the two operations apply (see e.g. Embick & Noyer 2001, 2007; Embick 2007b; Kandybowicz 2007; Schoorlemmer 2009; Arregi & Nevins 2012; Myler 2013). Since the presence of hierarchical syntactic structure is necessary for Lowering to apply, it must apply relatively early on the PF branch, i.e. before Linearization. Local Dislocation, on the other hand, applies after Linearization and Vocabulary Insertion. By transitivity, we can conclude that Lowering precedes Local Dislocation:

(57) *Order of PF operations (first version):*

Lowering >> {Vocabulary Insertion, Linearization} >> Local Dislocation

These two operations correspond to the different adjective positions that are possible (above or below φ P). If the adjective is merged lower than φ P, then it is the closest c-commanded head and can be targeted by Lowering (58).

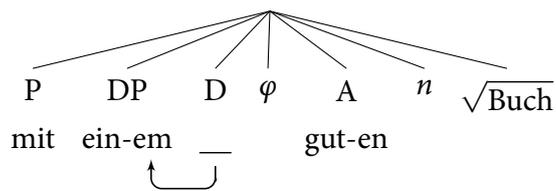
(58) *Lowering of φ (pre-linearization):*



Since the indefinite article is higher than D in the structure, Lowering of D cannot apply in the structure in (58). Given the order of postsyntactic operations in (57), Linearization applies and turns the hierarchical structure in (58) into a ‘flat’ structure of linearized terminals in (59). In this structure, Local Dislocation of *-em* can apply to its immediately adjacent host *ein*.⁹

⁹To be precise, this form of Local Dislocation involves ‘leaning’ or *attachment under adjacency* (see Embick & Noyer 2001:563f.; Embick 2007a:11f., Embick 2007b:326f.; also cf. Marantz 1988). While Local Dislocation can often

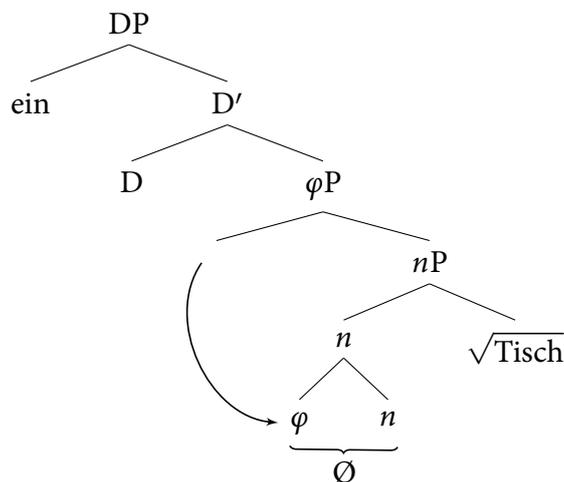
(59) Local Dislocation of D (post-linearization):



If the adjective is merged above φ P, then Local Dislocation is responsible for attaching both affixes as in (61).

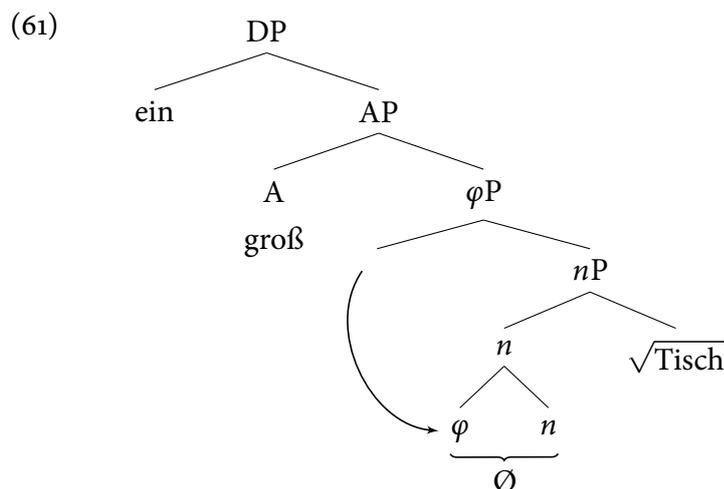
Next, let us consider what happens when no adjective is present in the structure. Since Lowering of the affix in φ targets the closest c -commanded head, then the φ node is lowered onto the n . When φ is subsumed under n , the complex n head receives the standard null Spell-Out of φ (60). This could also be viewed as contextual Spell-Out of φ as \emptyset in the context of n . What is important here is that Lowering ensures that the adjectival inflection originating in φ will not be realized if there no intervening adjective to block Lowering to n .

(60)



There is one derivation that must be ruled out, namely one in which the adjective is merged above φ P, and Lowering of n applies (61). This results in an unwanted outcome where an adjective remains uninflected (**ein groß Tisch*).

lead to a reversal in linear order, it does not have to.



In order to exclude such a derivation, I assume that there is a general PF constraint that requires that adjectives bear overt inflectional endings. This constraint is given in (62), where roots exempt from this constraint (such as *lila*) are listed as exceptions (see Embick 2003 on ‘listedness’).

- (62) *Obligatoriness of adjectival inflection:*
 An adjective must bear an overt inflectional ending.
 (Lexical exceptions: { $\sqrt{\text{lila}}$, $\sqrt{\text{rosa}}$, $\sqrt{\text{prima}}$, $\sqrt{\text{super}}$, ... })

Since the φ affix can, in principle, be attached either by Lowering (prior to linearization) or Local Dislocation (post-linearization), these competing derivations compete in the postsyntactic component. Generally, derivations fulfilling the *Earliness* requirement (Pesetsky 1989) by employing Lowering will be favoured. However, attachment of the φ affix can be postponed until after Linearization if this will result in satisfaction of the constraint in (62). Further motivation this constraint comes from the fact that the lexical exceptions listed in (62) can remain uninflected (see Section 4.6), and also the fact that (62) acts a trigger for copying with multiple adjectives (see Section 4.7)

4.3 Two arguments for AP-over-NP structure in German

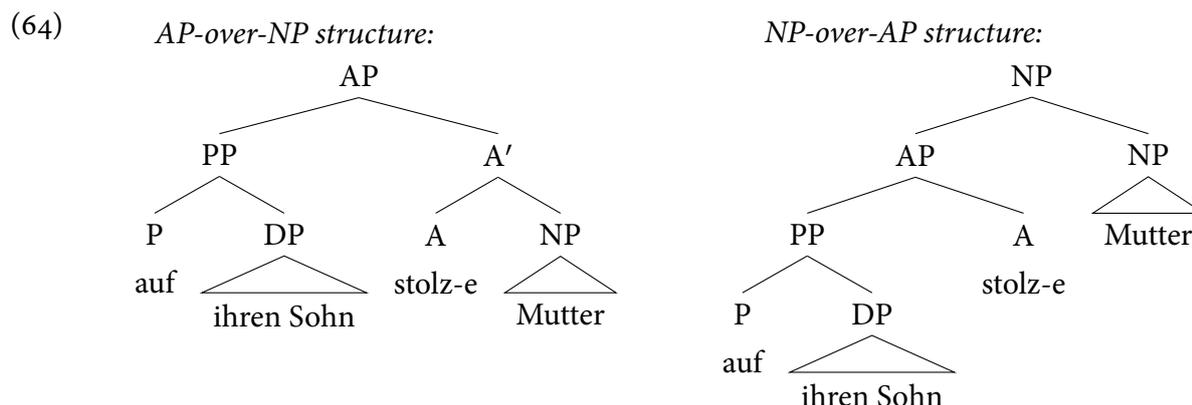
The preceding section proposed that adjectives are heads in the nominal spine. Since this is a potentially controversial assumption, I will devote some time defending it here. In particular, I present two novel arguments involving the order of constituents within the AP and the exceptional licensing of bare genitive arguments by adjectives. It may seem that examples with complex pronominal adjective phrases such as those in (63) constitute good evidence that the adjective is not a head, but rather a phrase adjoined to the nominal spine.

- (63) a. [DP die [AP [DP dem Mann] treue-e] Frau]
 the the.DAT husband loyal-AGR wife
 ‘The wife loyal to her husband’ (Fanselow 1986:343)

- b. [DP die [AP [PP auf ihren Sohn] stolz-e] Mutter]
the on her son proud-AGR mother
‘the mother proud of her son’

(Alexiadou & Wilder 1998:311)

However, there are two possible structures for complex prenominal attributive adjective phrases. The first structure is the so-called ‘AP-over-NP’ structure originally proposed by Abney (1987), where the adjective is a head in the nominal spine and projects its complement as a specifier (cf. Sadler & Arnold 1994; Bošković 2005). The alternative analysis involves an ‘NP-over-AP’ structure in which a phrasal AP is adjoined to the NP. Both of these analyses are shown in (64).



While NP-over-AP structure seems to be more widely adopted, the present analysis crucially assumes that adjectives are eligible targets for postsyntactic operations such as Lowering, and should therefore have the status of heads in the grammar. In what follows, I will present two arguments in favour of the analysis of the AP-over-NP structure in German.¹⁰

¹⁰ Svenonius (1994:445f.) argues against the AP-over-NP analysis based on the fact that degree modifiers only have scope over the immediately following adjective in sentences like *some barely hot, black coffee*. Roehrs (2016) shows that this argument also carries over to German (i). However, nothing speaks against the analysis in (i) where *sehr* (‘very’) adjoins directly to the A-head.

- (i) [AP [A sehr heiß-er] [AP [A schwarz-er] [nP Kaffee]]]
very hot-AGR black-AGR coffee
a. ‘very hot, black coffee’
b. #‘very hot, very black coffee’

In fact, there is independent evidence supporting this analysis. Bhatt (1990) observes that the position of adverbs such as *oft* (‘often’) are relatively free inside prenominal APs (iia). Degree modifiers such as *sehr*, however, must appear adjacent to the adjective (iib), which is unexpected if they adjoin freely inside the AP phrase (as *oft* does).

- (ii) a. [DP der [AP (*oft*) [PP auf seine Kinder] (*oft*) stolz-e] Vater]
the often on his children often proud-AGR father
‘the father often proud of his children’
b. [DP der [AP (**sehr*) [PP auf seine Kinder] (*sehr*) stolz-e] Vater]
the very on his children very proud-AGR father
‘the father very proud of his children’

(Bhatt 1990:74)

This analysis could well extend to potentially challenging cases such as (iii) (pointed about by a reviewer) in which an inflectional ending attaches to the ‘wrong’ element. In examples such as (iii), accepted by some speakers, the inflectional ending attaches to the linearly adjacent degree modifier *genug* (‘enough’) rather than the adjective.

4.3.1 AP-internal order

A rather simple argument for AP-over-NP structure comes from observations about the default word order inside the adjective phrase. In attributive pronominal APs, PP complements must precede the adjective as in (65) (cf. van Riemsdijk 1983:237).

- (65) a. [DP der [AP [PP auf seinen Sohn] stolz-e] Vater]
 the on his son proud-AGR father
 b. *[DP der [AP stolz-e [PP auf seinen Sohn]] Vater]
 the proud-AGR on his son father
 ‘the father proud of son’ (Roehrs 2016:2f.)

It is interesting to note that this is not the case when the AP is used predicatively. Here, the neutral word order involves the complement PP following the adjective, as in (66).

- (66) Der Vater ist [AP stolz [PP auf seinen Sohn]]
 the father is proud on his son
 ‘The father is proud of his son.’

While it is also sometimes possible for the PP to precede the adjective, this is due to middle-field scrambling out of the AP. The fact that negation intervenes between the PP and the adjective in (67) suggests that this movement is indeed not AP-internal.

- (67) Scarlett Johansson ist [PP auf ihre Filme] nicht [AP stolz t_{PP}]¹¹
 Scarlett Johansson is on her films not proud
 ‘Scarlett Johansson is not proud of her films.’

This can be tested more carefully with AP fronting to the prefield position (i.e. Spec-CP). Here, we find a clear contrast between the two word orders, with only the A-PP order in (68b) yielding a grammatical result.¹²

- (68) a. [AP Stolz [PP auf sie]] ist er schon immer t_{AP} gewesen
 proud on her is he PRT always been
 b. ?*[AP [PP Auf sie] stolz] ist er schon immer t_{AP} gewesen
 on her proud is he PRT always been
 ‘He has always been proud of her.’

This strongly suggests that the base-generated order inside the AP is head-initial. Given this, the

- (iii) %[DP der [AP ja leider nicht [A groß genug]-e [NP Topf]]]
 the PRT unfortunately not big enough-AGR pot
 ‘the pot that was unfortunately not big enough’

If we assume that *genug* also forms a complex head with the adjective, then leftward Local Dislocation of φ will force the ending to appear on the rightmost element of the complex A head, namely *genug*.

¹¹URL: <http://www.rp-online.de/kultur/film/scarlett-johansson-ist-auf-ihre-filme-nicht-stolz-aid-1.1598302> [accessed 08.08.17]

¹²This test rests on the assumption that only one constituent can occupy the prefield. While there are restricted examples of what look like V₃-constructions, these have been shown not to involve genuine fronting of multiple constituents (see Müller 2005 and also Müller 2018).

fact that the order of head and complement inside prenominal APs is obligatorily the opposite of this does not follow from the NP-over-AP structure in which a phrasal AP is adjoined to the nominal spine. While it is possible to stipulate additional ‘adjacency’ requirements that force head-finality inside the AP when it is used attributively (see e.g. Reuland 1979; Ewert & Hansen 1993), the fact that PP complements must precede attributive adjectives follows naturally if they are projected as specifiers of A.¹³

4.3.2 Distinctness

Another argument for the status of adjectives as heads comes from their ability to license bare genitive modifiers (Murphy 2018). A rather curious restriction in the syntax of the German DP is that bare mass nouns are not possible as genitive attributes (69a), but only as possessive PP complements (69b) (see Gallmann 1998; Müller 2002b; Sternefeld 2004).

- (69) a. *Der Konsum [Wassers]
the consumption water.GEN
b. Der Konsum [von Wasser]
the consumption of water
‘The consumption of water’ (Duden 2009:980)

A further interesting complication to this picture is that bare nouns can be used as genitive attributes if they are modified by an adjective (70c).

- (70) Der Konsum [frischen Wassers]
the consumption fresh.GEN water.GEN
‘The consumption of fresh water’

The ban on bare nominal genitives can be understood as an instance of what Richards (2010) calls *Distinctness*, as defined in (71).

- (71) *Distinctness* (Richards 2010:5):
If a linearization statement $\langle \alpha, \alpha \rangle$ is generated, the derivation crashes.

As Richards (2010:5) explains, ‘this condition rejects trees in which two nodes that are both of the type α are to be linearized in the same Spell-Out domain.’ Richards discusses a number of examples in which a Distinctness violation can be avoided by adding a phase head to ensure that the similar items no longer occur in the same Spell-Out domain. This can also be used to explain the ungrammaticality of (69a). Assuming that D is a phase head and that bare nouns are NPs

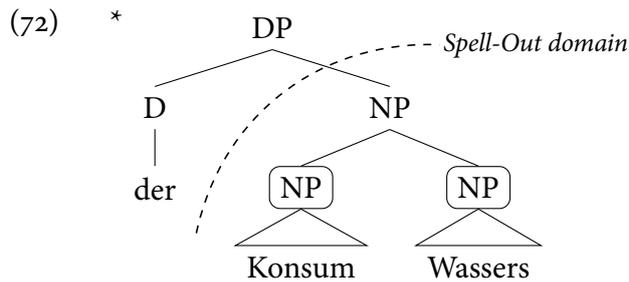
¹³If an adjective takes multiple complements, then these can be merged in either order:

- (i) a. [DP ein [AP jedem [A' am Dummheit [A' ebenbürtig-er [NP Kandidat]]]]]
a everyone.DAT on stupidity equal-AGR candidate
b. [DP ein [AP am Dummheit [A' jedem [A' ebenbürtig-er [NP Kandidat]]]]]
a on stupidity everyone.DAT equal-AGR candidate
‘a candidate equal to everyone in stupidity’

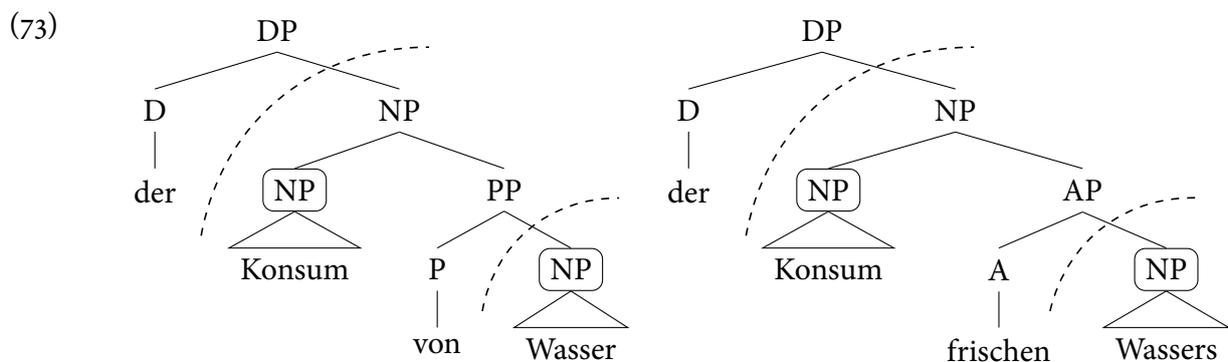
(Haider 2010:153)

This does not necessarily entail that reordering is derived by AP-internal movement (cf. Roehrs 2016).

(cf. Paul 2004), then the presence of two NP nodes in the Spell-Out domain of the same D head results in the illicit linearization statement $\langle \text{NP}, \text{NP} \rangle$ (72).¹⁴



Under this view, what makes examples such as (69b) and (70) possible is the introduction of another Spell-Out domain by a phase head. As (73) shows, this can either be a P or an A head.



Crucially, this explanation is only possible given an AP-over-NP structure in which A is a (phase) head in the nominal spine.

4.4 NP ellipsis

Returning to the cases at hand, this section will lay out how ellipsis works in the present system. Recall that German has an active process of NP ellipsis, as evinced by examples such as (74).

- (74) Ich habe ein neu-es Buch und du hast ein alt-es $\langle \text{Buch} \rangle$.
 I have a new-ACC.NEUT book and you have an old-ACC.NEUT book
 ‘I have a new book, and you have an old one.’

Following Merchant (2014); Saab & Lipták (2016); Saab (to appear), among others, I assume that cases of NP ellipsis such as (74) target the *nP* constituent. Formally, this is triggered by a

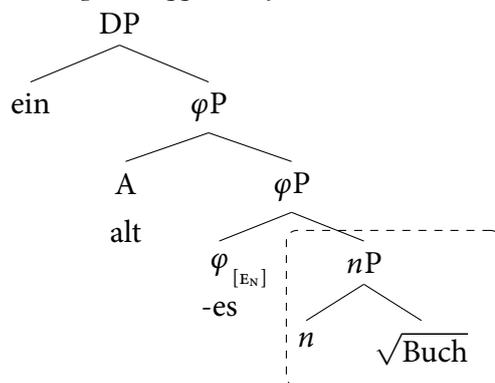
¹⁴It is interesting to note that proper nouns lacking a determiner do not seem to trigger a Distinctness effect:

- (i) a. [DP Die [NP Verschmützung [DP \emptyset [NP Roms]]]]
 the pollution Rome.GEN
 ‘the pollution of Rome’
 b. *[DP Die [NP Verschmützung [NP Wassers]]]
 the pollution water.GEN
 ‘the pollution of water’ (Haider 1992:331)

This supports the idea originating in Abney (1987) that proper nouns are DPs with a silent determiner. In the present case, this additional D head creates another Spell-Out domain and prevents the NP from triggering a Distinctness violation.

construction-specific variant of Merchant's (2001) [E]-feature ([E_N]). This feature triggers non-pronunciation of its complement, either as an instruction for PF not to parse its complement, or by some other technical means (cf. Bartos 2000; Kornfeld & Saab 2004; Harley 2005; Nunes & Zocca 2009; Saab 2009; Aelbrecht 2011; Murphy 2016). Most recent approaches to NP ellipsis place this feature on the sister of *nP*, namely Num. The corresponding node in the present analysis is φ , also resulting in *nP* ellipsis (elided material is indicated by a dashed box):

(75) *NP ellipsis triggered by E_N:*



In addition, I follow Saab & Lipták (2016) in making the additional assumption that ellipsis applies early enough in the PF derivation to bleed certain postsyntactic operations. Furthermore, ellipsis of a particular constituent renders that constituent inaccessible to further postsyntactic operations. Recall Saab & Lipták's 'Elmo Generalization' from (48) (repeated below).

(76) *Ellipsis-Morphology (Elmo) Generalization:*

For every morphological operation MO that affects the domain of X, where X contains the target of MO, MO cannot apply in X if X is subject to ellipsis.

The generalization is tantamount to a statement that ellipsis bleeds 'downward operations' such as Lowering that target elements in the ellipsis site (cf. Saab & Lipták 2016:77, fn.11). This also presupposes then that ellipsis precedes Lowering on the PF branch:

(77) *Order of PF operations (version 2):*

(NP-)Ellipsis, Lowering >> {Vocabulary Insertion, Linearization} >> Local Dislocation

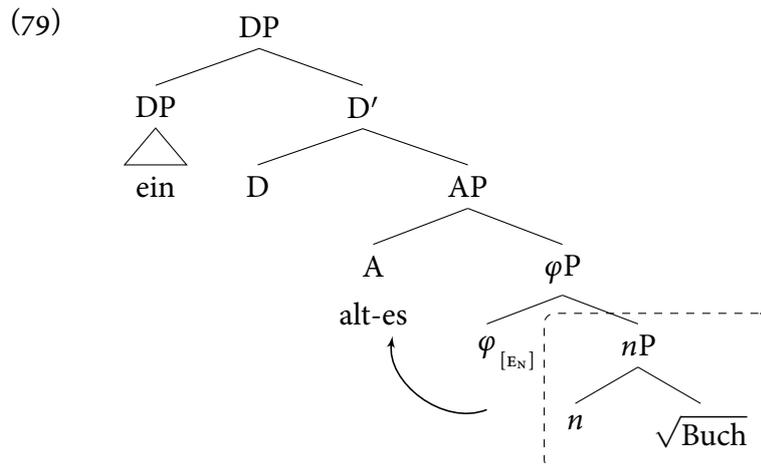
4.5 Deriving pronominal forms from NP ellipsis

With these assumptions in place, we are now in a position to show how pronominal forms can be derived by NP ellipsis. Let us first consider NP ellipsis with an adjectival remnant, as in (78).

(78) Ich habe ein neu-es Buch und du hast ein alt-es ⟨Buch⟩.
 I have a new-AGR book and you have a-Ø old-AGR book
 'I have a new book and you have an old one.'

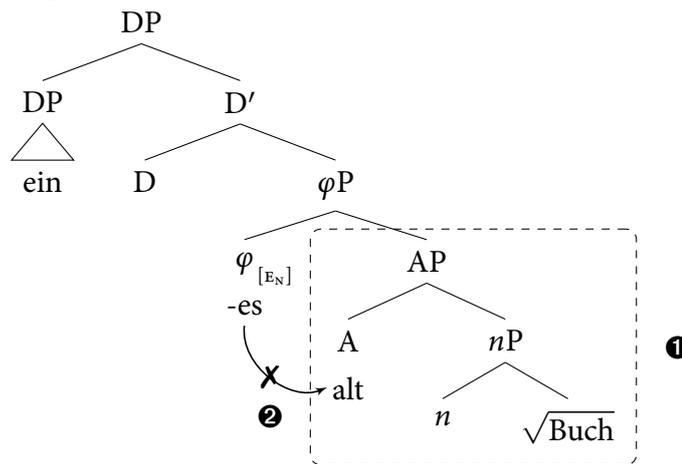
In such an example, the adjective is merged above φ P and is therefore not contained in the domain affected by ellipsis (*nP*). Following the ordering of PF operations in (77), the *nP* constituent

is first elided, and then Local Dislocation fuses the φ -affix with the adjective (79).



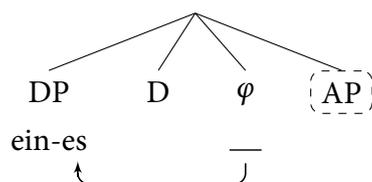
If the adjective is merged below φ P, however, then early application of ellipsis bleeds Lowering of φ to the adjective since it renders the elided constituent (the sister of φ) inaccessible for later operations on the PF branch (80).

(80) *Ellipsis bleeds Lowering:*



This creates a stranded affix configuration in which the affix in φ cannot attach to its intended host. Since Lowering of φ failed, the affix in must now be dealt with by a later operation. Given the order of operations in (77), the next viable operation to apply is Local Dislocation, which differs from Lowering in being sensitive to linear adjacency and phonological structure. Due to its application after Linearization, Local Dislocation can also allow for suffixes to attach ‘leftward’ to non c-commanded material such as the determiner in Spec-DP (cf. (59)). This what happens in the present case. As (81) shows, the adjectival inflection hosted by φ undergoes Local Dislocation to the indefinite determiner *ein*.

(81) Local Dislocation of ‘stranded’ affix:



This gives rise to the emergence of putative pronominal forms such as *eines* in (82).

(82) Ich habe ein neues Buch und du hast auch ein-es (neu(-es) Buch).
 I have a new-ACC.NEUT book and you have also a-ACC.NEUT new book
 ‘I have a new book and you have one too.’

Thus, ellipsis is special in that it bleeds an operation that would normally always apply early (Lowering), and exceptionally allows for operations later on the PF branch such as Local Dislocation, which not normally get the chance to apply, to associate an adjectival ending with a non-canonical host. This is why ellipsis contexts can result in forms of the determiner that we would not ordinarily find. On this view, however, this exceptional form is derived in the PF component, rather than being stated in additional paradigm.¹⁵

Let us now consider how we can derive the exceptional nature of pronominal forms under this approach. Recall from Figure 1 (repeated below) that we can derive the pronominal paradigm by adding the relevant adjectival endings to those three exceptional contexts in which *ein* does not bear an ending.

<i>Indefinite article inflection:</i>					<i>Mixed adjectival inflection:</i>				<i>Indefinite pronoun inflection:</i>				
	MASC	FEM	NEUT		MASC	FEM	NEUT		MASC	FEM	NEUT		
NOM	ein-	eine	ein-	+	NOM	-er	-e	-es	⇒	NOM	einer	eine	eines
ACC	einen	eine	ein-		ACC	-en	-e	-es		ACC	einen	eine	eines
DAT	einem	einer	einem		DAT	-en	-en	-en		DAT	einem	einer	einem
GEN	eines	einer	eines		GEN	-en	-en	-en		GEN	eines	einer	eines

Figure 1: Deriving the pronominal paradigm

It was shown that this state of affairs is captured by the generalization about the pronominal paradigm in (24), repeated below.

¹⁵An anonymous reviewer wonders how examples such as (i) can be ruled out, where a contrastively focused adjective is merged below φ .

(i) Ich habe ein NEUES Buch. #Du hast aber ein-es (ALT-es Buch)
 I have an old book you have but a-AGR old-AGR book
 ‘I have an OLD book, but you have a NEW one.’

This is ruled out by the semantic licensing requirements imposed by the [E]-feature in Merchant (2001), which I also assume to hold for nominal ellipsis (also see Merchant 2014). Importantly, elided material must be ‘e-GIVEN’ and mutual-entailment (viz. focus-closure) must hold between the ellipsis site and the antecedent (see Merchant 2001:26f.). If there is a semantic mismatch between the ellipsis site and the antecedent (here: *neu* vs. *alt*), then nominal ellipsis will not be licensed. In general, this entails competition between derivations from the same numeration that merge the adjective high (above φ) and those that merge it low. In (i), the standard licensing requirements on ellipsis rule out the structure in which the non-matching adjective merges low enough to be included in the ellipsis site. In this case, only the derivation in which *alt* evades ellipsis by merging higher than φ will be possible.

(83) *Generalization about the pronominal paradigm:*

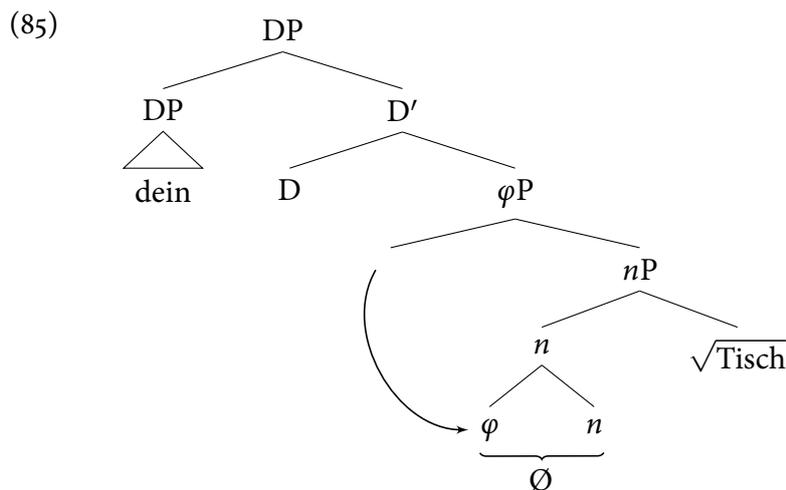
Adding the corresponding adjectival endings to three uninflecting contexts in the *ein*-word paradigm yields the pronominal paradigm.

The challenging aspect of deriving this generalization is how to single out these three cells of the paradigm, since they do not form a natural class based on any obvious morphological criterion (see Roehrs 2009:128). In fact, it will be shown that this generalization follows automatically from the presumed linearly-oriented nature of Local Dislocation.

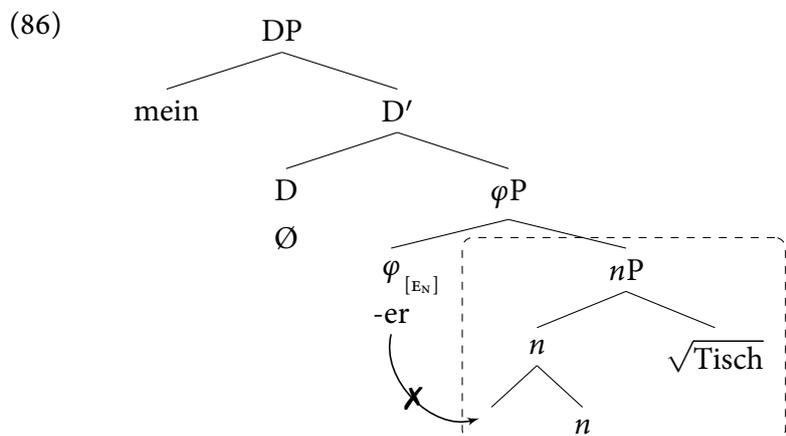
In order to see this, first consider an example of NP ellipsis where no adjective is present (84). In this case, the strong adjectival morphology obligatorily appears dislocated on the possessive determiner *mein* ('my').

(84) Dort ist dein- \emptyset Tisch, und hier ist mein-er.
 there is your-NOM.MASC table and here is my-NOM.MASC
 'There is your table, and here is mine.'

In non-elliptical contexts where no adjective is present, Lowering of φ to the *n* head results in a null Spell-Out of φ and the non-occurrence of the associated inflection (85).



However, ellipsis of *nP* bleeds Lowering of φ to *n* resulting in the stranded affix configuration:



An important assumption at this point is that the three exceptional cells in the *ein*-word and

mixed paradigms result from an idiosyncrasy in which nominative masculine and nominative / accusative neuter contexts trigger the realization of strong endings in φ , rather than D. As we will see, this appears to be a quirk associated with *ein*-words, but also holds for some other contexts involving possessors (87a) and singular pronouns (87b) (cf. Roehrs 2009:30,136).

- (87) a. Peter-s groß-er Tisch
 Peter-GEN big-STR table
 'Peters big table'
 b. Du arm-er Idiot
 you poor-STR idiot
 'you poor idiot'

In this narrow set of contexts, D is realized as null and the strong ending originates in φ and is the one that attaches to adjectives or becomes stranded by NP ellipsis, as outlined above.

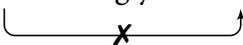
Returning to the explanation of why only contexts in which *ein*-words lacking an ending combine with the adjectival inflection, this is argued to follow from independently motivated properties of Local Dislocation. An important assumption about Local Dislocation, given in (88), is that it operates under string adjacency and is therefore sensitive to the phonological form of terminals (since it applies after Vocabulary Insertion).

- (88) *Local Dislocation Hypothesis* (Embick & Noyer 2001:566):

If a movement operation is Vocabulary sensitive, it involves only string-adjacent items.

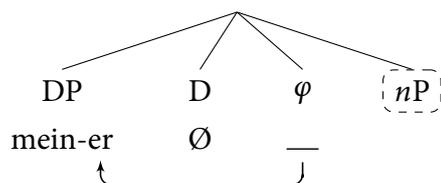
This can be illustrated on the basis of superlative forms in English. Embick & Noyer (2001:564f.) assume that the superlative affix *-st* attaches to an adjective under adjacency (89a). This can be seen by the fact that intervening material such as *amazingly* between the affix and the adjective blocks Local Dislocation (89b,c).

- (89) a. Mary is the -st smart person.

 b. Mary is the -st amazingly smart person.

 c. Mary is the *mo*-st amazingly smart person.

In the context of NP ellipsis, this means that Local Dislocation of φ to the determiner is only possible when the D head is phonologically null, as in (90).

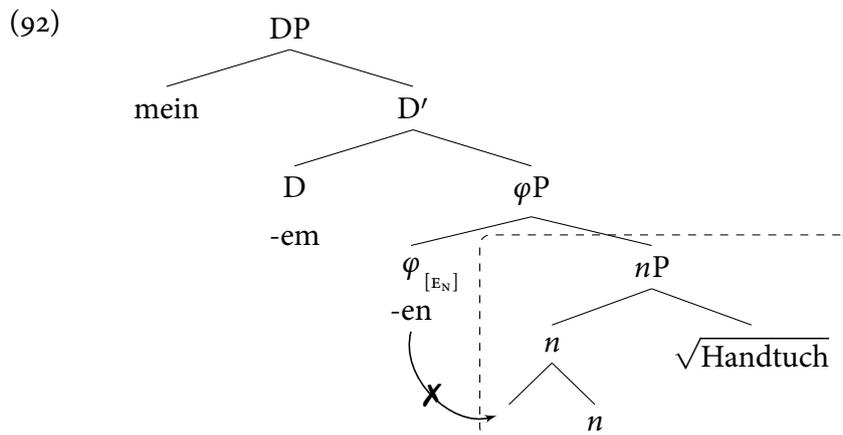
- (90) *Local Dislocation possible across null affix:*



However, Local Dislocation is not possible if a strong ending realized is realized in D, as with the regular cells in the *ein*-word paradigm such as dative neuter (91).

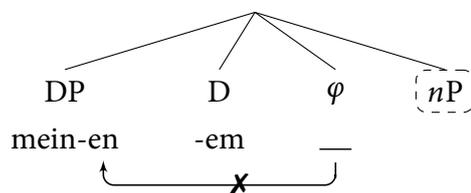
- (91) Den Fleck kannst du mit ein-em (alt-en) Handtuch entfernen, aber
 the.ACC stain can you with a-NEUT.DAT (old-NEUT.DAT) towel remove but
 nicht mit mein-em!
 not with my-NEUT.DAT
 ‘You can get rid of that stain with a(n) (old) towel, but not with mine!’

The corresponding structure is given in (92), where the strong ending *-em* originates in D and the stranded φ head is realized as *-en*.



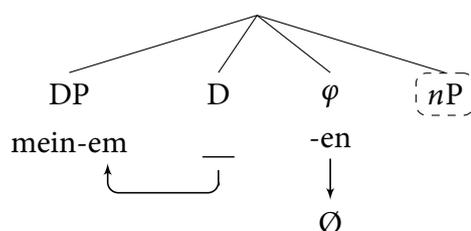
When it comes to dealing with both of these stray affixes, the affix hosted in D intervenes to make Local Dislocation of φ to the determiner impossible:

- (93) *Local Dislocation blocked by overt article inflection:*



Instead, it is the closest affix in D (*-em*) that undergoes Local Dislocation to attach to the determiner. The question is now what happens to φ in such cases. Again, I follow Saab & Lipták (2016) in assuming that it is deleted by an even later operation of *Morphological Ellipsis*.

- (94) *Deletion of φ as Last Resort:*



Recall that the order in which PF operations apply is partially intrinsically determined. Operations such as Lowering make reference to hierarchical structure and must be therefore precede Linearization. Local Dislocation, on the other hand, must follow Linearization and, by transitivity, Lowering. Saab & Lipták (2016:98ff.) claim that languages differ with regard to how they

resolve the stranded affix configuration. They argue that, in Spanish, a stranded Num head is not reattached to a different host by Local Dislocation, but is instead deleted by a *Morphological Ellipsis* operation.¹⁶ Assuming that this operation, or something like it, is independently motivated (see Arregi & Nevins 2007 for the similar concept of *Obliteration*), we can assume it is extrinsically ordered after Local Dislocation in German.

(95) Order of PF operations (*final version*):

Ellipsis, Lowering >> {Vocabulary Insertion, Linearization} >> Local Dislocation >> Morphological Ellipsis

A crucial aspect of this explanation is that the order in which postsyntactic operations may apply adheres strictly to the order of PF operations (Arregi & Nevins 2008, 2012). Thus, Lowering will usually attach an affix to some lower head. If Lowering cannot apply to a given affix (either due lack of a suitable c-commanded host or NP ellipsis), then the next relevant operation in the series will have the chance to have an effect. This is Local Dislocation. However, if Local Dislocation also fails to apply, then Morphological Ellipsis will apply to delete an affix. Importantly, the only context in which Local Dislocation cannot successfully find a host is (94), and thus, this is the only context in which the effect Morphological Ellipsis can be seen. As such, while it may at first seem strange that German does not simply employ Morphological Ellipsis to resolve stray affix configurations rather than displacement, this is because this operation is not immediately accessible. Instead, it functions as a kind of ‘Last Last Resort’, when the ordinary Last Resort option (Local Dislocation) also fails to deal with the affix.

We saw that the ordering between Lowering and Local Dislocation is intrinsically determined due to their ordering relative to Linearization. The ordering between Local Dislocation and Morphological Ellipsis, on the other hand, is extrinsic or ‘parochial’ (Pullum 1979). In German (and Hungarian for Saab & Lipták 2016), Local Dislocation precedes Morphological Dislocation and is therefore the first choice for resolving stray affix configurations. According to Saab & Lipták (2016), Spanish prefers to delete the affix in a stranded head, rather than dislocate it. This suggests that the order of the relevant operations is reversed in this language, and Morphological Ellipsis takes precedence over Local Dislocation. Thus, accounting for parametric variation in this way also requires strict adherence to a fixed order of operations at PF.

Finally, the assumption that Local Dislocation cannot cross an intervening determiner explains why exceptional pronominal forms are only found in the *ein*-word paradigm in cases where the determiner does not bear an overt inflectional ending, i.e. when D is null. In all other cases in which D is occupied by overt material, e.g. with NP ellipsis with definite determiners, the designated ending for the determiner in D will be attached, and the affix φ will be deleted, as illustrated above.

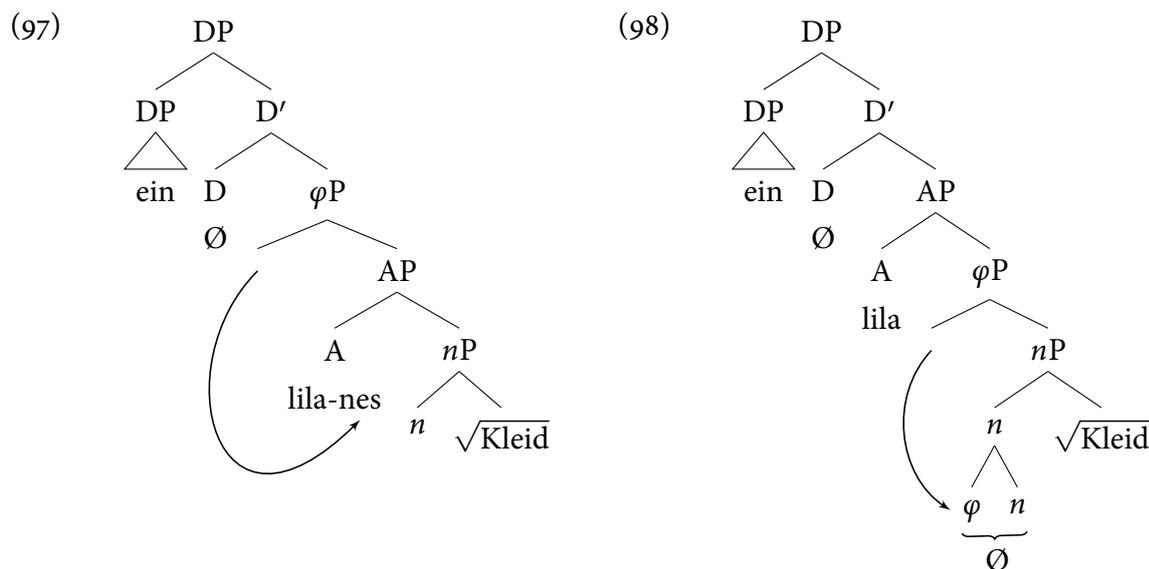
¹⁶An anonymous reviewer wonders why it is not possible to have a second instance of Local Dislocation to form **mein-em-en*. This clearly has to be ruled out by some other principle of the grammar, e.g. an morphological OCP constraint, that prohibits multiple inflectional endings (e.g. strong and weak inflection) from attaching to the same host.

4.6 Optionality disappears: *lila* revisited

Consider again some of the data that were typically used to support the claim that only strong inflection licenses NP ellipsis. In (44), repeated below, it was shown that a particular class of adjectives including *lila* ('purple') optionally allow for inflection to be absent.

- (96) a. ein lila Kleid
 a purple dress
 b. ein lila-nes Kleid
 a purple-AGR dress
 'a purple dress' (Muysken & van Riemsdijk 1985:26)

In the current approach, the presence or absence of agreement follows from two distinct derivations. When the adjective is inflected (96b), the adjective adjoins below φ P, then the φ affix will be fused with it via Lowering (97). If it adjoins higher, however, then the affix receives a null Spell-Out when lowered to *n* (98).



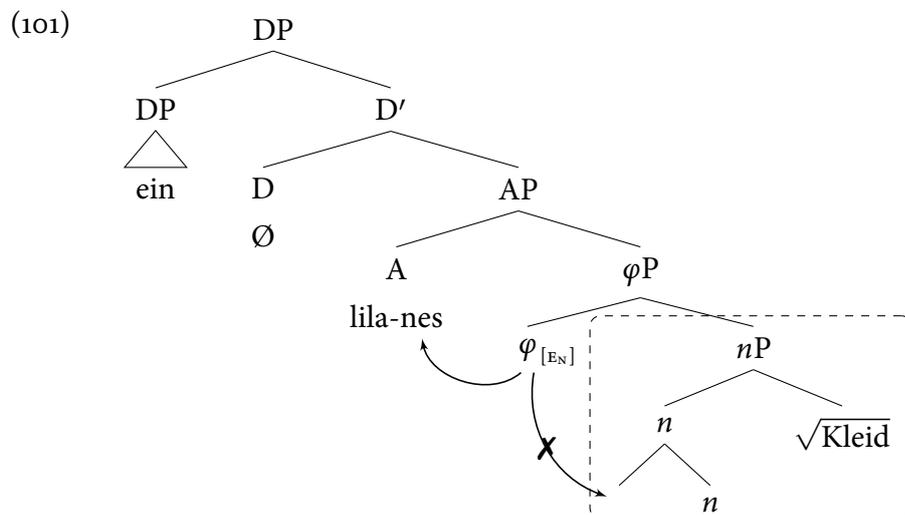
Recall that the derivation in (98) was assumed to be generally unavailable due to a PF constraint requiring adjectives to bear inflection. However, such a derivation is possible for *lila* since it was listed as one of the few exceptions to this PF constraint in (62) (repeated below).

- (99) *Obligatoriness of adjectival inflection:*
 An adjective must bear an overt inflectional ending.
 (Lexical exceptions: { $\sqrt{\text{lila}}$, $\sqrt{\text{rosa}}$, $\sqrt{\text{prima}}$, $\sqrt{\text{super}}$, ...})

Recall that the unagreeing form of the adjective is not possible in ellipsis contexts (100). which indicates that the derivation in (98) becomes unavailable in ellipsis contexts.

- (100) Wenn ich ein Kleid tragen muss, dann lieber ein lila*(-nes) \langle Kleid \rangle
 if I a dress wear must then rather a purple*(-AGR) dress
 'If I have to wear a dress, than I'd rather wear a purple one.'

This follows naturally under present assumptions, since the ‘disappearance’ of the φ affix crucially involves Lowering to n , which is contained in the ellipsis site. Thus, while it is generally possible for *lila* to remain uninflected when it merges higher than φ , this option is precluded when φ -to- n Lowering is independently ruled out (101).



Thus, the present system derives the fact that optional inflection with adjectives of the *lila*-type becomes obligatory under ellipsis without assuming that inflection plays any role in ellipsis licensing.

4.7 Multiple adjectives

One issue that has not yet been addressed is inflection with multiple adjectives. This is *prima facie* a challenge for the account developed so far, since the φ head provides exactly one affix corresponding to adjectival inflection, however, multiple adjectives all bear the relevant inflection, as the examples in (102) show.

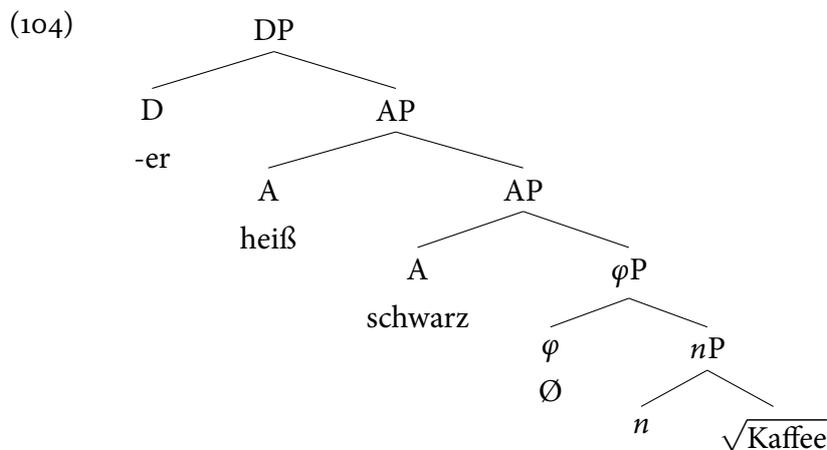
(102) *Inflection with multiple adjectives* (Roehrs 2009:29,137):

- a. d-er heiß-e schwarz-e Kaffee
the-STR hot-wk black-wk coffee
'the hot black coffee'
- b. ein-Ø gut-er süß-er Wein
a-Ø good-STR sweet-STR wine
'a good sweet wine'
- c. heiß-er schwarz-er Kaffee
hot-STR black-STR coffee
'hot black coffee'

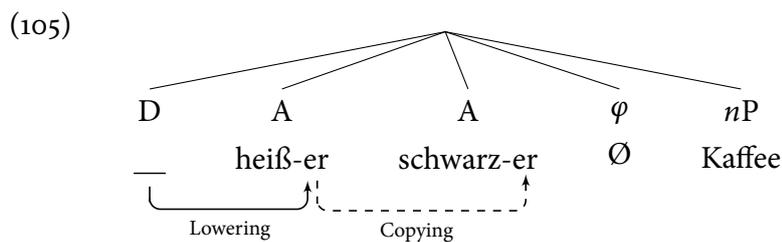
Given the assumption that D is the locus of strong inflection and φ is the locus of weak inflection, we need to find a way for both weak inflection (102a) and strong inflection (102b,c) to be replicated across adjectives. What I will propose here is that this follows from the condition on overt adjectival inflection in (62), repeated below in (103).

- (103) *Obligatoriness of adjectival inflection:*
 An adjective must bear an overt inflectional ending.
 (Lexical exceptions: { $\sqrt{\text{lila}}$, $\sqrt{\text{rosa}}$, $\sqrt{\text{prima}}$, $\sqrt{\text{super}}$, ... })

It was already shown that this condition rules out certain derivations in which adjectives remain uninflected (with certain lexical exceptions). If multiple adjectives are merged in a clause, then after the inflectional ending from D or φ has attached to one of the adjectives, the other(s) will remain uninflected, in violation of (103). Thus, I propose that there is a Last Resort copying mechanism to avoid a violation of the PF filter in (103). To see this, consider the derivation of (102c). Since the strong endings attach to the adjective(s) in the absence of an article, let us assume that lack of a specifier in D leads to contextual Spell-Out of φ as null.



Given this structure, the strong ending in D will lower onto the the closest c-commanded adjective *heiß*. At this point, the other adjective *schwarz* remains uninflected and is not listed as a lexical exception to the requirement in (103). This triggers Last Resort copying of the affix onto the following adjective (105).

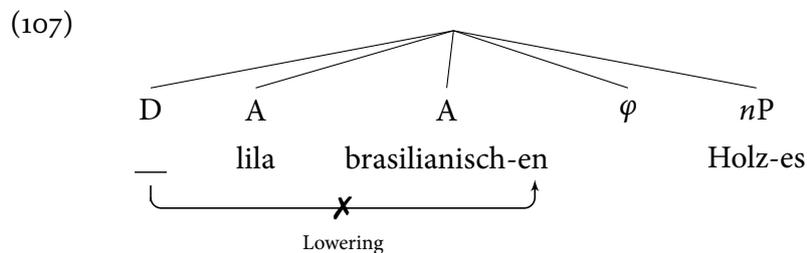


This analysis can also potentially make sense of a puzzling restriction on inflection with multiple adjectives noticed by Gallmann (1996). As (106a) shows, an optionally uninflecting adjective such as *lila* ('purple') cannot precede an adjective requiring obligatory inflection such as *brasilianisch* ('Brazilian'). However, the reverse order in (106b) is possible, where *lila* follows the obligatorily inflecting adjective.

- (106) a. *die Verarbeitung lila- \emptyset brasilianisch-en Holzes
 the treatment purple- \emptyset Brazilian-AGR wood.GEN
 'the treatment of purple Brazilian wood'

- b. die Verarbeitung schwer-en lila-Ø Holzes
 the treatment heavy-AGR purple-Ø wood.GEN
 ‘the treatment of heavy purple wood’ (Gallmann 1996:296)

In order to derive (106a) under current assumptions, Lowering of the affix would have to skip the first adjective, which is not possible given the strictly local nature of the operation (107).



To reach the second adjective, the affix would first have to lower to *lila* and then be copied onto *brasilianisch*, resulting in inflection on both adjectives. In the derivation of (106b), the affix lowers onto the first adjective and there is no trigger for Last Resort copying since *lila* is listed among the exceptions to the obligatory inflection requirement.

This analysis also allows for copying to be partial in transferring some but not all of the features of the source, as is rather commonplace in reduplication phenomena (see Barbiers et al. 2009 on partial wh-copying in Dutch). Although multiple adjectives without an article normally both take strong endings (108a), some speakers allow for the second to bear a weak ending in the dative (108b) (cf. Gallmann 1996, 2004; Müller 2002b).¹⁷ It is interesting to note, however, that weak inflection can only occur on the second adjective, not the first (108c).

- (108) a. mit frisch-em schwarz-em Kaffee
 with fresh-STR black-STR coffee
 b. %mit frisch-em schwarz-en Kaffee
 with fresh-STR black-WK coffee
 c. *mit frisch-en schwarz-em Kaffee
 with fresh-WK black-STR coffee
 ‘with fresh black coffee’ (Demske 2001:53)

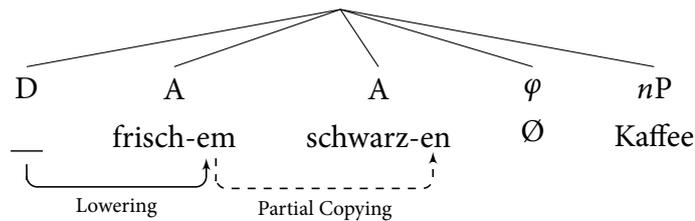
As shown above, the first ending is the one attached by Lowering and the second one is derived by copying. Thus, we would seem to correctly predict that if partial copying of a subset of the features of the strong ending is possible, then the impoverished weak ending should only be possible on the second, but not the first adjective in the series (109), since this is the one derived by Copying rather than Lowering.¹⁸

¹⁷ This pattern also seems to be possible under NP ellipsis for the relevant speakers:

- (i) Das Fenster muss man mit Wasser putzen, und zwar mit warm-em sauber{-em/%-en} (Wasser)
 the window must one with water clean and PRT with warm-STR clean{-STR/%-WK} water
 ‘The window has to be cleaned with water – warm, clean water, in fact’

¹⁸ An alternative approach would be to say that some speakers optionally allow the suppressed weak ending in φ to be realized in addition to the strong ending in D. This would still derive the generalization that (108c) is ruled out since φ would only be able to undergo Local Dislocation to the linearly closest adjective.

(109)



5 Cross-linguistic perspective

5.1 NP ellipsis in Dutch

The present analysis can also potentially explain some similarly puzzling data from NP ellipsis in Dutch (cf. Corver & van Koppen 2009, 2011). In terms of gender, Dutch only distinguishes between neuter and non-neuter nouns (110) (Corver & van Koppen 2009:8, also cf. Broekhuis & Keizer 2012). Adjectives modifying non-neuters are marked with agreement suffix *-e* when following the indefinite determiner *een* (110b), whereas adjectives modifying neuter singular nouns show no agreement when they follow an indefinite determiner (111b).

(110) *Non-neuter singular nouns:*

- a. de klein-e goochelaar
 the.NON.NEUT small-AGR magician
- b. een klein-e goochelaar
 one small-AGR magician

(111) *Neuter singular nouns:*

- a. het witt-e konijn
 the.NEUT white-AGR rabbit
- b. een wit(*-te) konijn
 one white(-AGR) rabbit

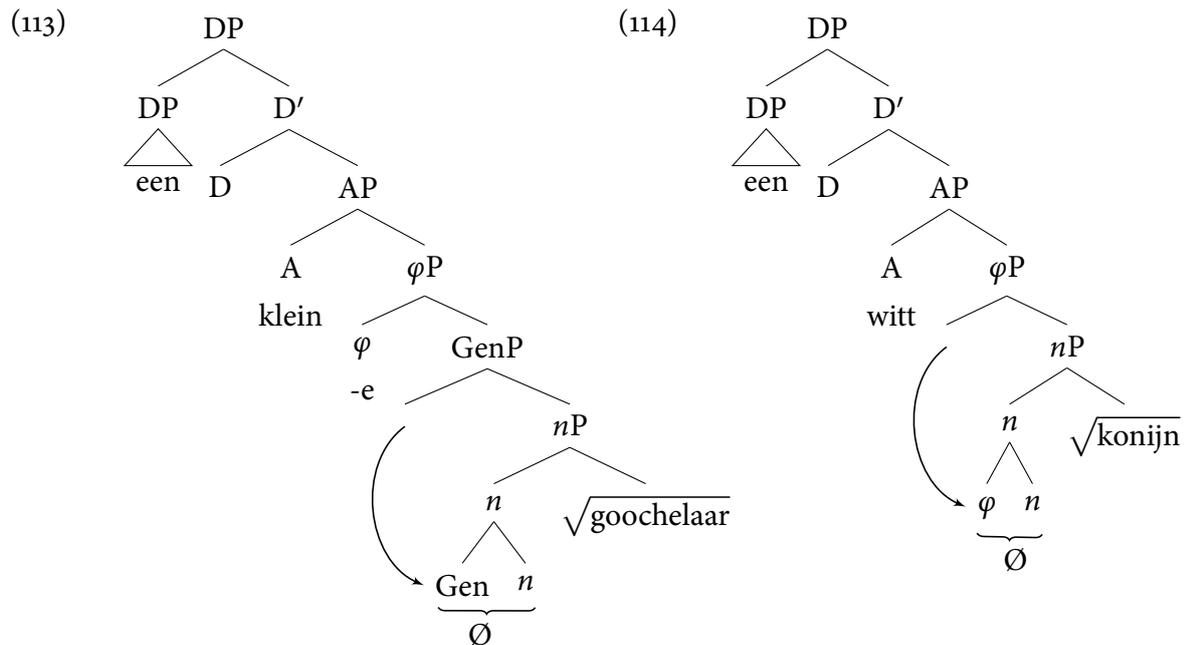
Interestingly, however, a number of Dutch speakers also allow for an adjective modifying an indefinite neuter noun to show agreement if the noun is elided (Kester 1996a,b; Corver & van Koppen 2009, 2011):

- (112) Jan had voor Marie een rood-∅ boek gekocht, maar zij had veel
 John had for Mary a red-NEUT.SG book.NEUT.SG bought but she had much
 liever een groen-e (boek).
 rather a green
 'John had bought a red book for Mary, but she preferred a green one.'

(Kester 1996a:69)

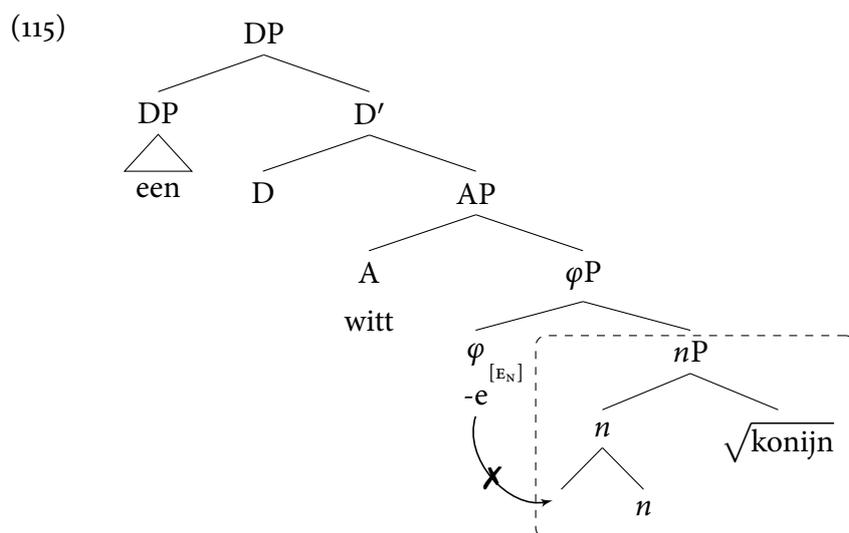
We are then faced with a similar situation to the putative German 'pronouns', since we have an element bearing a kind of inflection under ellipsis that would not be possible in non-elliptical contexts. This Dutch case can also be handled in a similar fashion. Following assumptions in the previous sections, let us assume that adjectival agreement *-e* is located on the head of a φ P

projection (or alternatively it could be a classifier, following Alexiadou & Gengel 2012).¹⁹ Recall that, in general, we have assumed that there is a Lowering operation that merges the *n* with its closest c-commanding head. Focussing on indefinite DPs, let us assume for argument's sake, that non-neuter DPs (110b) contain an additional functional projection directly below φ P. Since the relevant distinction seems to involve Gender, we can call this GenP (cf. Picallo 1991). It is then this Gen head, rather than φ which undergoes Lowering (113). I assume that this projection is absent with neuter indefinite DPs such as (111b) and thus, φ -Lowering results in the disappearance of agreement as we saw above for German (114).



As shown in previous sections, φ -to-*n* Lowering is bled by NP ellipsis. If we adopt the same analysis for (112), then the process that would normally result in the disappearance of the *-e* suffix with indefinite neuter nouns is blocked, as shown in (115).

¹⁹ Corver & van Koppen (2009) propose that the *-e* is the head of a DP internal focus projection that licenses ellipsis (but see Eguren 2010; Alexiadou & Gengel 2012 for criticism of this approach). The *-e* marker is later argued by Corver & van Koppen (2011) to be a NP *pro*-form under a pronominalization account of NP ellipsis. However, none of these approaches offer a particularly good reason why this marker is absent with indefinite neuter DPs.



Thus, the descriptively similar situation we find in Dutch that ellipsis can license non-canonical inflection on adjectives can be handled in an entirely parallel way to German determiners.

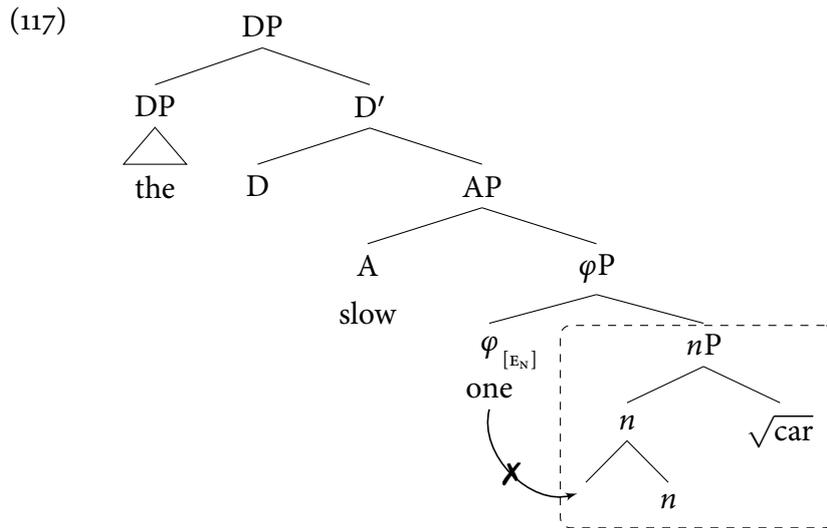
5.2 *One-anaphora* in English

A different strategy for dealing with a φ -head stranded by NP ellipsis would be to realize it as a free morpheme, rather than an affix. Cases of so-called ‘*one-anaphora*’ in English seem like good candidates for such a strategy. In English, a gap created by NP ellipsis cannot follow an adjective, instead the pronoun *one* must be used (116).

- (116) a. Sue has a fast car and Bill has a slow *(one).
 b. John took the red marbles and I took the blue *(ones).

In the current system, it is possible to analyze the obligatory occurrence of *one* as the result of NP ellipsis (Perlmutter 1970; Elbourne 2001; Llobart-Huesca 2002; Harley 2005). Assuming that the φ head that would normally lower onto *n* is stranded when *nP* is elided, then φ is spelled out as the free morpheme *one* (117).²⁰

²⁰In the cases of plural *ones*, we can assume that φ would normally host the plural suffix *-s* that lowers to *n* to derive plural inflection. When this is stranded, *one* is inserted as a Last Resort – similar to *do*-support (see Llobart-Huesca 2002).



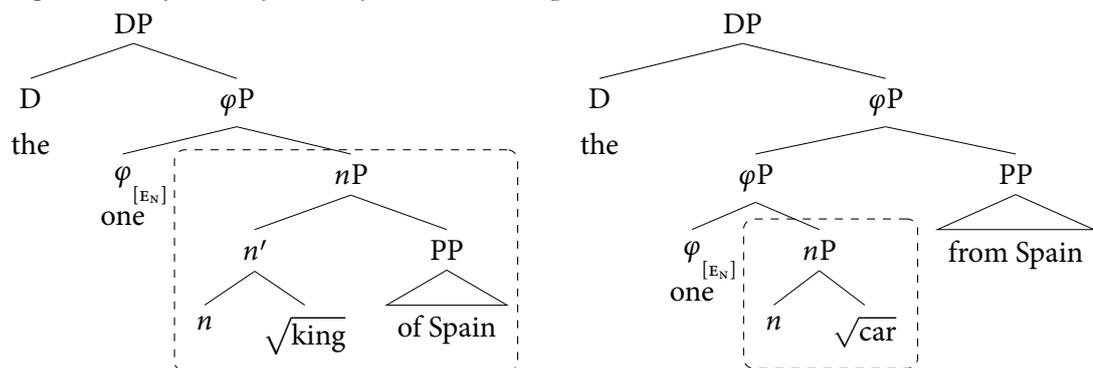
This approach is compatible with a classic observation about the possibility of *one*-anaphora with arguments and adjuncts (Lakoff 1970; Jackendoff 1977; Baker 1978; Hornstein & Lightfoot 1981; Radford 1981; Schütze 2001). As (118) shows, an NP can be replaced with *one* to the exclusion of an adjunct such as *from Spain* (118a), but not with a noun complement of *Spain* (118b).²¹

- (118) a. I bought the car from England and Sam bought the one from Spain.
 b. *I met the king of England and Sam met the one of Spain.

(Lakoff 1970:629)

Under the assumption that *nP* is elided and that PPs such as *of Spain* are selected by *n*, then the impossibility for this PP to co-occur with *one* in (118b) follows from the fact that it is contained inside the ellipsis site, unlike adjuncts PP which attach higher (119).

(119) *Argument/adjunct asymmetry with one-anaphora:*



This analysis predicts that what is traditionally viewed as *one*-pronominalization should exhibit properties of ellipsis constructions, or ‘surface anaphora’ (Hankamer & Sag 1976). In other words, we should be able to find evidence for an elided, yet syntactically present, noun in the vicinity of *one* (see Houser et al. 2007; Bentzen et al. 2013 on mixed properties of VP anaphors in Danish, Norwegian and German). One such piece of evidence comes from ellipsis licensing. NP ellipsis,

²¹It is important to note that the generality of this contrast has been questioned on the basis of counter-examples from corpora (see e.g. Pullum & Scholz 2002; Payne et al. 2013). The precise conditions under which such examples become grammatical remains rather unclear.

even when it results in the presence of *one*, needs to be licensed by a relevant antecedent meeting certain criteria. While the identity condition is often assumed to be semantic for the most part (Merchant 2001), it has been known since at least Hardt (1993) that there are cases of what Merchant (2013:445) calls ‘phrase marker identity’, in which an ellipsis of VP is licensed by an antecedent VP inside a deverbal noun (Fu et al. 2001; Johnson 2001). Consider the contrast in (120).

- (120) a. ?That man is a *robber*, and when he does [_{VP} *rob*], he tries not to make any noise.
 b. *That man is a *thief*, and when he does [_{VP} *steal*], he tries not to make any noise.
 (Merchant 2013:446)

The VP *rob* can be licensed by the matching VP structure inside the deverbal nominal *robber* (120a). However, semantically similar nouns which are not derived from verbs (such as *thief*) do not license VP ellipsis (120b).

Similar effects have been reported for *one*-anaphora. This is shown by (121), where ellipsis of the NP *knife* is licensed by the presence of a syntactic *nP* projection inside the deverbal noun *knife-d* (121a), but not by the semantically similar verb *stab*, which is not plausibly derived from a noun (121b) (also cf. Webber 1978:118f.).

- (121) a. ?Max *knifed* me before I even realized he had [_{DP} *one* [_{nP} *knife*]]
 b. *Max *stabbed* me before I even realized he had [_{DP} *one* [_{nP} *knife*]]
 (Bresnan 1971:592)

This data provides strong evidence against the view that *one*-anaphora involves genuine pronominal reference, since derived nominals of the kind in (121a) are known to be ‘anaphoric islands’ (Postal 1969).

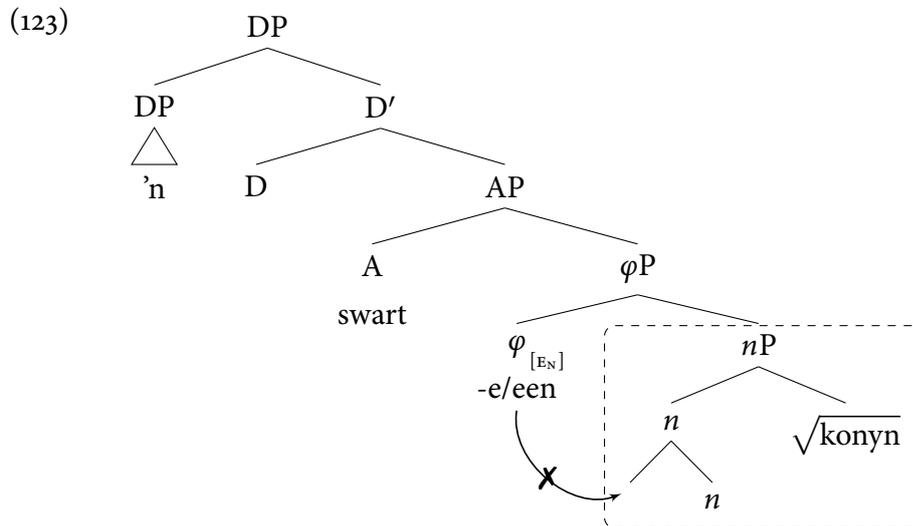
5.3 NP ellipsis in Afrikaans

So far, we have seen that φ can either be realized as an inflectional affix, as in German and Dutch, or as a free morpheme such as *one* in English. A reasonable expectation would then be that we would find a language in which φ can be realized as either one of these forms. Afrikaans seems to be a good candidate for such a language. As Corver & van Koppen (2011) report, Afrikaans displays a pattern that is similar to Dutch in many ways, but also crucially different. When an NP is elided, it can surface either as a free morpheme *een* (‘one’) (122a), or as a bound inflectional suffix *-e* (122b). In (122c), the co-occurrence of both forms is ungrammatical.

- (122) Jan het [_{DP} ’n wit konyn] gekoop ...
 Jan has a white rabbit bought
 ‘Jan bought a white rabbit...’
 a. en Gert het [_{DP} ’n swart *een*] gekoop
 and Gert has a black one bought
 b. en Gert het [_{DP} ’n swart-*e*] gekoop
 and Gert has a black-AGR bought

- c. *en Gert het [_{DP} 'n swart-*e* een] gekoop
 and Gert has a black-AGR one bought
 'and Gert bought a black one.' (Corver & van Koppen 2011:380)

Corver & van Koppen (2011) view these options as base-generated pro-forms, but they can be equally well captured in the present system as the realization of a stranded φ head (123).



The NPE data in Afrikaans turn out to be a little more complicated, however. As (124b) shows, polysyllabic adjectives take both *-e* inflection in conjunction with *een*.

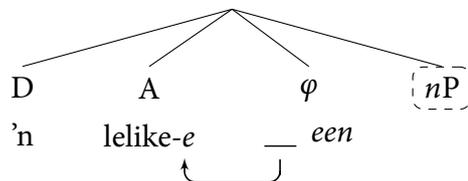
- (124) Jan het [_{DP} 'n prachtig-*e* konyn] gekoop ...
 Jan has a beautiful-AGR rabbit bought
 'Jan bought a beautiful rabbit...'
- a. en Gert het [_{DP} 'n lelik-*e*] gekoop
 and Gert has a ugly-AGR bought
 'and Gert has bought an ugly one.'
- b. en Gert het [_{DP} 'n lelik-*e* een] gekoop
 and Gert has a ugly-AGR one bought
 'and Gert has bought an ugly one.' (Corver & van Koppen 2011:380)

The conditions on adjectival inflection in Afrikaans are not morphosyntactic, but rather morphophonological in nature (Donaldson 1993:163f.; Corver & van Koppen 2011:378,fn.6). Adjectives must inflect if they are polysyllabic, or end in one of a particular set of obstruents. Since attachment of an adjective (via Local Dislocation) or its 'deletion' (via Lowering to *n*) seems to depend on phonological considerations, it makes sense to conceive of this as the result of a PF requirement, such as the *obligatoriness of adjectival inflection* requirement previously posited for German. We can therefore conclude that something like the following PF condition must hold in Afrikaans:

- (125) *Obligatoriness of adjectival inflection (Afrikaans):*
 An adjective must bear an overt inflectional ending if...
 a. it is polysyllabic, or
 b. it ends in /d/, /f/, /x/ or /s/

This will then rule out a derivation in which φ receives a null Spell-Out after Lowering to n if this would result in an adjective that meets either of the conditions in (125) being left uninflected. The simultaneous presence of *-e* and *een* can be treated an instance of Last Resort multiple exponence of the φ head, triggered by the properties of the adjective. If Spell-Out as *een* is chosen with a polysyllabic adjective, then secondary exponence of φ as *-e* must also take place (perhaps with prior Fission of the φ terminal; Halle & Marantz 1993:116), in order to provide an inflectional affix for the adjective, as shown in (126).²²

- (126) *Multiple exponence of φ in Afrikaans:*



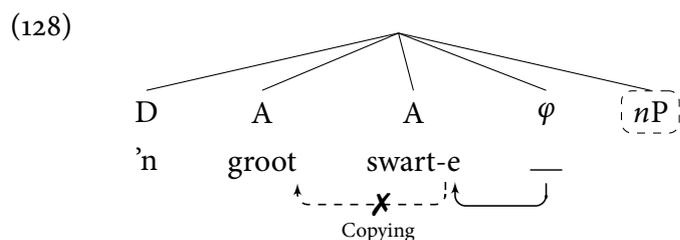
This approach also makes correct predictions with multiple adjective remnants of NP ellipsis. With multiple monosyllabic adjectives, we find that the inflectional ending *-e* can only surface on the second of the adjectives, as in (127a).

- (127) Jan het [_{DP} 'n groot wit konyn] gekoop ...
 Jan has a big white rabbit bought
 a. en Piet het [_{DP} 'n groot swart-e] gekoop
 and Piet has a big black-AGR bought
 b. *en Piet het [_{DP} 'n grot-e swart-e] gekoop
 and Piet has a big-AGR black-AGR bought
 c. *en Piet het [_{DP} 'n groot swart] gekoop
 and Piet has a big black bought
 d. *en Piet het [_{DP} 'n grot-e swart] gekoop
 and Piet has a big-AGR black bought
 'and Piet bought a big black one.' (Corver & van Koppen 2011:382)

This follows under the view that inflection is the result of Last Resort copying. In the derivation of (127a), the affix originating in φ undergoes Local Dislocation to attach the linearly closest host,

²²It is worth noting that this apparent multiple exponence is also a challenge for the analysis of Corver & Koppen (2011) where *-e* and *een* are base-generated proforms. Since they are assumed to occupy the syntactic position, we would not expect them to co-occur as they do in (124b). In light of this, Corver & van Koppen revise their assumptions and claim that there is also *-e* inflection that, for some reason, may only appear on polysyllabic adjectives and is deleted under haplology when adjacent to the homophonous *-e* proform. What regulates the distribution of this adjectival inflection is not made clear, and this would seem to somewhat undermine their claim that *-e* is only an NP proform. On the other hand, the present account treats *-e* as genuine inflection, whose distribution is regulated by PF factors such as ellipsis and the condition in (125).

the second adjective *swart* (128).



However, copying of the affix to the first adjective is not licensed, since this is only driven by the constraint in (125). As the adjective *groot* does not fall under the scope of this constraint, there is no trigger to copy the affix and it remains uninflected.

5.4 Strong agreement in split topicalization

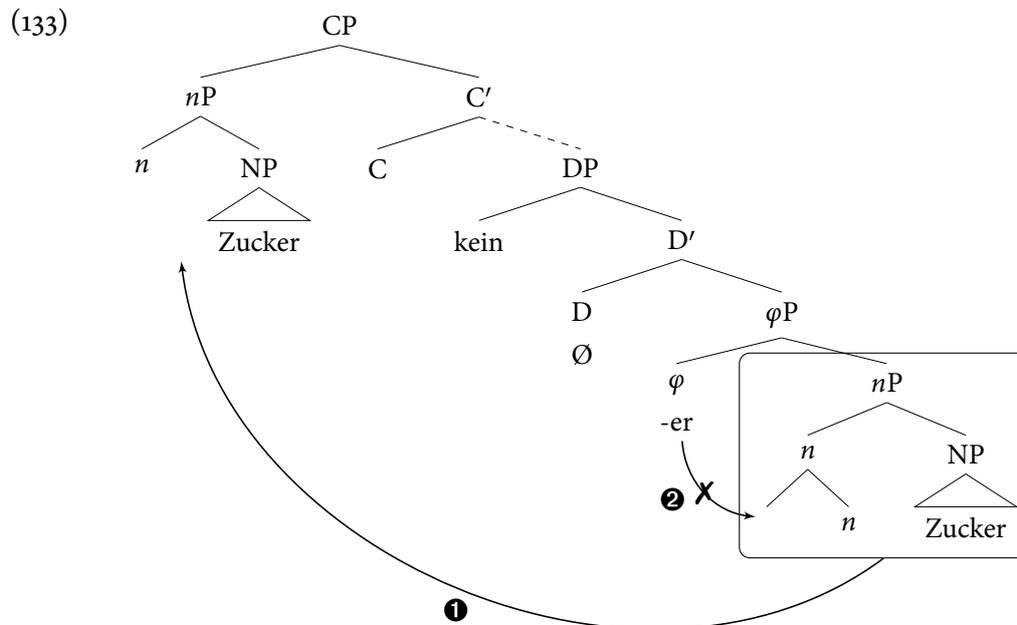
Further support for the general approach pursued here comes from so-called ‘split topicalization’ in German (Fanselow 1988; Kniffka 1996; van Hoof 1997; Roehrs 2006, 2009; Nolda 2007; Ott 2012). The simplest instantiations of this construction involve part of a noun phrase displaced to a clause initial position (129).

- (129) a. Autos besitzt er nur schnelle ____
cars owns he only fast
‘As for cars, he only has fast ones.’ (Fanselow & Ćavar 2002:69)
- b. Französische Bücher hat Amina bisher nur wenige gute ____ gelesen
French books has Amina so.far only few good read
‘As for French books, so far Amina read only a few good ones.’ (Ott 2012:2)

As with NP ellipsis, we find the exceptional occurrence of strong forms of indefinite determiner, for example *keiner* instead of *kein*:

- (130) a. Das ist k-ein(*-er) Fruchtsalat
that is NEG-one(*-AGR) fruit.salad
- b. Fruchtsalat ist das k-ein*(-er) ____
fruit.salad is that NEG-one*(-AGR)
‘That is not fruit salad.’ (Nolda 2007:67)
- (131) a. Er hat k-ein(*-es) Auto
he has NEG-one(*-AGR) car
- b. Auto hat er kein*(-es) ____
car has he NEG-one*(-AGR)
‘He doesn’t have a car’ (van Hoof 1997:6)
- (132) a. Ich bin k-ein(*-er) generativer Linguist.
I am NEG-one(*-AGR) generative linguist
- b. Generativer Linguist bin ich k-ein*(-er) ____
generative linguist am I NEG-one*(-AGR)
‘I am not a generative linguist.’ (Fanselow 1988:107)

This is clearly the same pattern that we find with pronominal forms – if the NP is missing, then the determiner must show exceptional strong inflection.²³ One could then simply claim that split topicalization constructions also involve NP ellipsis (e.g. Olsen 1987; Fanselow 1988; Fanselow & Ćavar 2002). The alternative would be to assume that split topicalization can, at least in some cases (what Ott 2012:2 calls ‘simple splits’), involve subextraction (van Riemsdijk 1989; Tappe 1989; Bhatt 1990).²⁴ After the *nP* is extracted, the φ -affix can no longer lower onto *n* (133).



If this derivation exists for at least some cases of split topicalization, then we are presented with an

²³It seems that a similar effect is found with floating quantifiers. As (ia) shows, inflection on the quantifier *all*- ('all') is typically not present when its DP restrictor immediately follows (Pafel 1994:264). However, if the quantifier is stranded by movement of the DP, then inflection becomes obligatory (ib).

- (i) a. Ich habe [_{QP} all(??-e) [_{DP} die Studenten]] hier eingeladen
 I have all(??-e) the students here invited
 'I invited all the students here.' (Kobele & Zimmermann 2012:249)
- b. Ich habe [_{DP} die Studenten] hier [_{QP} all*(-e) t_{DP}] eingeladen
 I have the students here all*(-AGR) invited
 'I invited all the students here.'

It is possible that this could also be analyzed as bleeding of φ -lowering to the moved DP (but see Merchant 1996:183f. for an alternative approach).

²⁴Particularly problematic cases for a subextraction account involve so-called ‘gapless splits’ such as (i).

- (i) Seltene Raubvögel hat Jürgen nur ein paar Bussarde gesehen
 rare birds.of.prey has Jürgen only a few buzzards seen
 'As for birds for prey, Jürgen has only seen a few buzzards.' (Ott 2012:3)

However, there are some connectivity diagnostics that suggest that at least the simple cases of split topicalization show \bar{A} -properties (see van Riemsdijk 1989, and van Hoof 2006 for an overview). For example, van Riemsdijk (1989) shows that split topicalization shows reconstruction for Principle A (ii), a fact that follows straightforwardly under a subextraction approach.

- (ii) Bücher von einander_i sind uns_i keine ___ bekannt.
 books of each.other are us none known
 'As for books of each other, none are known to us.' (van Riemsdijk 1989:115)

interesting parallel between the contexts for *do*-support and the analysis of pronominal inflection here, since both involve a stranded affix configuration that can be created either by movement or ellipsis (134), albeit in different syntactic domains (nominal vs. verbal).

- (134) a. He said he would teach him a lesson and [_{VP} teach him a lesson] he did t_{VP}
 b. He said he would teach him a lesson and he did [_{VP} ⟨teach him a lesson⟩]

Nevertheless, the alternative view that split topicalization involves NP ellipsis (e.g. Fanselow 1988) is of course also compatible with the analysis pursued here.

6 Conclusion

In this paper, it was shown that it is not necessary to posit a separate paradigm for putative ‘pronominal’ forms of *ein*-words in German. Instead, the distinction between *ein NP* and *einer*, for example, can be shown to follow from the assumption that pronouns are derived by NP ellipsis. It was argued that the classic approach by Lobeck (1995) in terms of strong agreement licensing ellipsis is problematic, particularly in light of more recent theoretical developments. Rather than posit particular forms of the determiner in ellipsis context, as Lobeck (1995) also does, this paper argued that the inflection found on the determiner in NP ellipsis contexts is genuinely displaced adjectival morphology.

In particular, it was argued that this insight can be captured by taking a closer look at the way ellipsis interacts with other operations in the postsyntactic component. Following insights by Saab & Lipták (2016), it was shown that seemingly exceptional pronominal forms can be derived under the assumption that NP ellipsis also bleeds postsyntactic Lowering in German. Providing an explicit model of the architecture in the German noun phrase, it was proposed that adjectival inflection originates on a distinct head φ and is attached to adjectives via postsyntactic operations such as Lowering. In the absence of such an adjective, φ was assumed to lower to the *n* head, and thereby receive a contextually null Spell-Out. The crucial assumption now is that this process is interrupted by NP ellipsis, which renders the *nP* inaccessible for postsyntactic operations. Failure of Lowering of the φ head results in a stranded affix configuration that must be repaired by a later postsyntactic operation. In the standard case, this is the linearly-oriented operation Local Dislocation that applies after linearization of the structure has taken place. This allows adjectival inflection to attach leftward to the determiner as a non-canonical host. Local Dislocation was shown to play an important role in deriving the generalization that we find this stranded inflection only in the three special contexts in which indefinite determiners lack an overt suffix of their own. This is because Local Dislocation applies only to string adjacent items (Embick & Noyer 2001), and an intervening suffix makes Local Dislocation impossible.

In sum, this paper lends further support to the hypothesis put forward by Saab & Lipták (2016) that ellipsis can bleed other postsyntactic processes, suggesting that it applies sufficiently early on the PF branch. This provides a further alternative to what has been the classic view of these facts going back to Lobeck (1995), namely that Furthermore, it provides arguments for strict ordering of postsyntactic operations in Distributed Morphology (e.g. Arregi & Nevins 2008, 2012;

Hein 2017). Overall, it shows that a closer study of the operations in the PF component and how they interact allows us to vastly simplify our assumptions about the inflectional inventory of German.

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