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Derivational Trapping And The Morphosyntax Of Inflectionlessness

Abstract

The broad objective of this dissertation is to advance our understanding of how grammatical operations are formulated in the postsyntactic module of the grammar. To that end, the dissertation examines the distribution of agreement morphemes, and especially the distribution of exceptionally inflectionless elements, whose lack of agreement morphology can affect other operations such as postsyntactic movement, in some cases interfering with these operations, yielding ungrammaticality.

The dissertation pursues a serial rule-based approach within the Distributed Morphology (DM) framework (Halle and Marantz 1993; Embick and Noyer 2001, 2007; Arregi and Nevins 2012; Harley 2014; a.o.), focusing chiefly on postsyntactic operations that produce and refer to agreement morphology ('node-sprouting') and postsyntactic operations that displace heads onto neighboring elements. The key innovation of the current model is that postsyntactic operations distinguish between their triggering environments and the actual execution of a change. A theoretical consequence of making this distinction is that a derivation can crash when the conditions for application of an operation are satisfied but the change itself cannot be executed, yielding ungrammaticality. This state of affairs is referred to as derivational trapping.

The evidence that bears on the theory of how postsyntactic rules are formulated comes from exceptionally inflectionless (EI) elements in various languages, including Bulgarian, Bosnian/Croatian/Serbian (BCS), German, Greek, Latin, Icelandic, Italian, and Russian. These EI elements belong to some syntactic category – such as adjective – whose members are specified to bear agreement morphology, while EI elements lack this morphology. The distributional properties of these elements is important for our understanding not only of the representation of inflectionlessness, but also of postsyntactic movement, the separation between the narrow syntax and the postsyntactic module, and the ways in which crashes in the postsyntactic module arise. Beyond the evidence from inflectionlessness for derivational trapping, the dissertation also examines other phenomena that motivate this approach, including lexical gaps, coordination, and other forms of postsyntactic movement.

Chapter 1 defines derivational trapping and articulates a model of the postsyntax, with special attention paid to two types of postsyntactic operations: i) node-sprouting, the operation which produces dissociated morphology such as agreement morphemes, and ii) postsyntactic movement. This chapter motivates an account of node-sprouting in which the operation may target a terminal node, a morphological word (MWd) (in the sense of Embick and Noyer 2001), or a phrase, and argues that node-sprouting at the MWd occurs prior to linearly defined movement operations. It also synthesizes various case studies from the literature to motivate an account of postsyntactic movement, whose locality is argued to be restricted by adjacency, in a way defined by the stage of linearization at which the operation is specified.

In Chapter 2, I claim that exceptional inflectionlessness is (often) a morphological fact that is encoded postsyntactically. Consequently, given the modularity of narrow syntax and the postsyntactic module, it is predicted that inflectionlessness can affect postsyntactic processes but not the narrow syntax. I evaluate this hypothesis by examining how the absence of agreement morphology affects postsyntactic movement and other operations in Latin, Icelandic, Bulgarian, Bosnian/Croatian/Serbian (BCS), Italian, and Russian. For Bulgarian and BCS, I offer a derivational trapping account to capture patterns of ungrammaticality.

Chapter 3 investigates German adjectival inflection, and demonstrates that its distribution is best stated in linear terms, thereby supporting its postsyntactic status, and it also demonstrates that the distribution of inflection supports the hypothesis that node-sprouting can happen at the phrasal level. I also

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Chapter 4, extends the account of derivational trapping to three other phenomena beyond agreement morphology: lexical gaps, postsyntactic movement into coordinate structures, and the (postsyntactic) formation of English possessive pronouns. I connect the stride gap (Yang 2016) to the feature structure and morphophonology of participles and preterites, showing how lexical gaps can give rise to derivational trapping due to the structure of morphophonological rules. I also argue on the basis of coordination data from various Romance languages for a derivational trapping account of postsyntactic ATB violations, with a refinement of the ATB constraint that permits certain types of attested putative violations. Lastly, I argue that derivational trapping can occur in the production of English possessive pronouns; the account captures surprising patterns of ungrammaticality that arise when an internally complex possessor contains a pronoun.

Chapter 5 summarizes the findings of the dissertation, pointing to limitations of the current study as well as to directions for future work.

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INFLECTIONLESSNESS

Luke James Adamson

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DERIVATIONAL TRAPPING AND THE MORPHOSYNTAX OF
INFLECTIONLESSNESS

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Luke James Adamson

For my parents, Rosemary and Jim Adamson.

ACKNOWLEDGMENT

As one might expect, this dissertation has my name on it (and I alone should be blamed for its faults), but many people contributed in some form to its creation.

I would first like to thank my advisor, Rolf Noyer, for all of the encouragement and insight he has offered me over the past few years. It has been a genuine privilege to be able to discuss and debate a wide range of topics with Rolf, from text-setting in art song to the issues that made their way into this document. Rolf's commitment to and insistence on getting me to tackle these questions as deeply as possible was evident not only from our meetings, but also from epic, treatise-length emails. His preternatural talent for scrutinizing low-level mechanics and his ability to link mechanics with broader theoretical questions have always been a source of inspiration, and the questions he posed in meetings were always the important theoretical ones that I had neglected to address. Rolf also helped me get through various academic struggles, and always remained unwavering in his support.

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The third member of my committee, Ruth Kramer, also deserves an effusive message of gratitude. I read Ruth's brilliant monograph from cover to cover a few years ago, which got me invested in questions about the nominal domain, and I had the fortune of getting her valuable input and her support during the most paralyzing stages of dissertation writing. If it were not for Ruth, this document would have probably turned out substantially worse and may not have been finished on time.

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community, to whom I am very grateful for all of the fun and intellectually stimulating conversations over the years. I'd especially like to thank my cohort: Pleng Chanchaochai, Alethia Cui, Kajsa Djärv, Ava Irani, and Milena Šereikaitė. Thanks to Pleng for all of the Thai food; to Aletheia for the LaTeX support and the commiseration over insomnia; to Ava for being a great gym buddy; and to Milena for being a collaborator that I learned a great deal from. Thanks also to all of my other friends and colleagues at Penn with whom I have had fun and helpful discussions: Faruk Akkuş, Andrea Beltrama, Johanna Benz, Nikita Bezrukov, Ryan Budnick, Akiva Bacovcin, Spencer Caplan, Ava Creemers, Aaron Ecay, Aaron Freeman, Sabriya Fisher, Duna Gylfadottir, Anton Ingason, Alexandros Kalomoiros, Hassan Munshi, Lefteris Papparonas, Ruaridh Purse, Ollie Sayeed, Einar Freyr Sigurðsson, Kobey Shwayder, Betsy Sneller, and Jérémy Zehr. I would also like to thank members of the Penn faculty from whom I learned so much about how to be a better linguist, especially Tony Kroch, Julie Anne Legate, Florian Schwarz, Meredith Tamminga, and Charles Yang. Thanks also to the Penn linguistics department's program coordinator, Amy Forsyth, for being patient with me even when I was irksome.

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ABSTRACT

DERIVATIONAL TRAPPING AND THE MORPHOSYNTAX OF INFLECTIONLESSNESS

Luke James Adamson

Rolf Noyer

The broad objective of this dissertation is to advance our understanding of how grammatical operations are formulated in the postsyntactic module of the grammar. To that end, the dissertation examines the distribution of agreement morphemes, and especially the distribution of exceptionally inflectionless elements, whose lack of agreement morphology can affect other operations such as postsyntactic movement, in some cases interfering with these operations, yielding ungrammaticality.

The dissertation pursues a serial rule-based approach within the Distributed Morphology (DM) framework (Halle and Marantz 1993; Embick and Noyer 2001, 2007; Arregi and Nevins 2012; Harley 2014; a.o.), focusing chiefly on postsyntactic operations that produce and refer to agreement morphology (‘node-sprouting’) and postsyntactic operations that displace heads onto neighboring elements. The key innovation of the current model is that postsyntactic operations distinguish between their triggering environments and the actual execution of a change. A theoretical consequence of making this distinction is that a derivation can crash when the conditions for application of an operation are satisfied but the change itself cannot be executed, yielding ungrammaticality. This state of affairs is referred to as *derivational trapping*.

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In Chapter 2, I claim that exceptional inflectionlessness is (often) a morphological fact that is encoded postsyntactically. Consequently, given the modularity of narrow syntax and the postsyntactic module, it is predicted that inflectionlessness can affect postsyntactic processes but not the narrow syntax. I evaluate this hypothesis by examining how the absence of agreement morphology affects postsyntactic movement and other operations in Latin, Icelandic, Bulgarian, Bosnian/Croatian/Serbian (BCS), Italian, and Russian. For Bulgarian and BCS, I offer a derivational trapping account to capture patterns of ungrammaticality.

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Chapter 1

Introduction

The broad objective of this dissertation is to advance our understanding of how grammatical operations are formulated in the postsyntactic module of the grammar. To that end, the dissertation examines the distribution of agreement morphemes, and especially the distribution of exceptionally inflectionless elements, whose lack of agreement morphology can affect other grammatical processes such as postsyntactic movement, in some cases interfering with these processes, yielding ungrammaticality.

To capture the patterns examined in the dissertation, I pursue a serial rule-based approach within the Distributed Morphology (DM) framework, focusing chiefly on postsyntactic operations that produce and refer to agreement morphology (‘node-sprouting’) and postsyntactic operations that displace heads onto neighboring elements. The key innovation of the current model is that postsyntactic operations distinguish between their triggering environments and the actual execution of a change. The consequence of this distinction is that a derivation can crash when the conditions for application of an operation are satisfied but the change itself cannot be executed, yielding ungrammaticality. I refer to this type of crash as *derivational trapping*.

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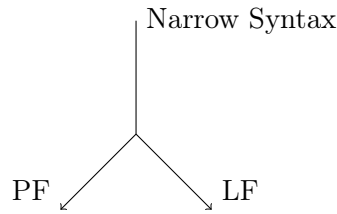
representation of inflectionlessness, but also of postsyntactic movement, of the separation between the narrow syntax and the postsyntactic module, and of the ways in which crashes in the postsyntactic module arise. Beyond the evidence from inflectionlessness for derivational trapping, the dissertation also examines other phenomena that motivate this approach, including lexical gaps, coordination, and other forms of postsyntactic movement.

This chapter establishes the theoretical framework for the rest of the dissertation. In Section 1.1, I lay out my general assumptions regarding the structure and ontology of the grammar. Section 1.2 introduces the proposed bifurcation between a rule’s triggers and its execution, which predicts the existence of derivational trapping. Sections 1.3 and 1.4 motivate explicit accounts of two of the main types of operations of interest in the dissertation: node-sprouting, which is restricted in terms of its possible targets (terminals, MWds, and phrases), and postsyntactic movement, which is restricted by locality, defined differently according to the stage of the derivation. Section 1.5 outlines the rest of the dissertation.

1.1 Background Assumptions

The assumptions of this dissertation are identified with those of the framework of Distributed Morphology (Halle and Marantz 1993; Halle 1997; Noyer 1992, 1997; Harley and Noyer 1999; Embick and Noyer 2001, 2007; Kramer 2009; Bobaljik 2012; Arregi and Nevins 2012; Harley 2014; Norris 2014; among many others). In Distributed Morphology (DM), there is no generative composition in the lexicon; and in the syntax, morphemes – not ‘words’ – correspond to syntactic terminals. Complex syntactic expressions are assembled using objects from LIST 1, a list of syntactic objects that includes functional morphemes (consisting of potentially complex feature bundles) as well as abstract roots. I adopt the conventional Y-Model: after the narrow syntax, the derivation splits into the ‘PF branch’ and the ‘LF branch’.

(1)



The PF branch – which I refer to in this dissertation as the postsyntax – is the part of the grammar which maps syntactic representations to formal realizations. This postsyntactic module of the grammar is internally complex, as the derivation involves various operations including linearization, feature deletion, some forms of movement, etc.

The mapping from morphemes to exponents occurs at the process called Vocabulary Insertion; the exponents are called Vocabulary Items and they are drawn from LIST 2. I assume the targets of Vocabulary Insertion are always at the level of the morpheme (e.g. Embick 2013) and not larger pieces of structure.¹ I assume the choice of exponence at Vocabulary Insertion is determined according to the Subset Principle, which establishes feature specificity as the way of assessing competition between exponents:

- (2) The phonological exponent of a Vocabulary Item is inserted into a morpheme...if the item matches all or a subset of the grammatical features specified in the terminal morpheme. Insertion does not take place if the Vocabulary Item contains features not present in the morpheme. Where several Vocabulary Items meet the conditions for insertion, the item matching the greatest number of features specified in the terminal morpheme must be chosen. (Halle, 1997, 128)

While the PF branch is the focus of the dissertation, there is also the LF branch, which is responsible for mapping syntactic expressions to interpretations. This branch is also internally complex, invoking its own list of elements (LIST 3, or the Encyclopedia), though this dissertation does not address issues related to this branch.

¹This is controversial among DM researchers, though the analyses in this dissertation are in principle compatible with alternatives; see e.g. Radkevich 2010; Bobaljik 2012; Ostrove 2018 on larger targets of Vocabulary Insertion.

The rest of Section 1.1 addresses specific views and definitions that frame the discussion of grammatical operations. Section 1.1.1 lays out explicit assumptions about the syntax of nominals; Section 1.1.2 formally defines morphological words (MWds) and subwords (SWds), which play a role in both node-sprouting and postsyntactic movement; and Section 1.1.3 defines how the postsyntax generates linearization statements, which are also essential to how postsyntactic rules are stated.

1.1.1 Structural assumptions about the nominal domain

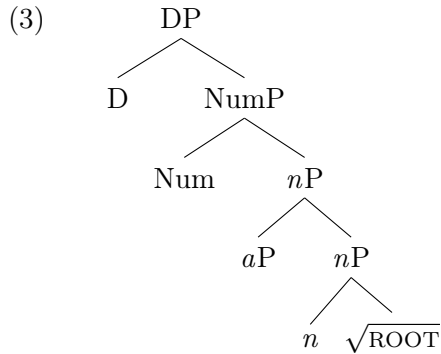
Much of the dissertation involves agreement morphology that expresses nominal features and movement that displaces elements internal to the nominal domain. This section lays out assumptions about nominal syntactic structure that will become relevant. I adopt the DP hypothesis (Abney, 1987), according to which nominals are DPs; D corresponds to the ‘top’ of the nominal domain, and is a head to which n P and the extended nominal projection appears in its complement.

I also follow others in adopting a lexical decomposition approach (Marantz, 1997; Arad, 2003; Embick and Marantz, 2008; Harley, 2014), which defines roots as individuated syntactic elements distinct from the category-defining heads with which they merge (a , v , n , etc.); thus a nominalizing head n categorizes a root $\sqrt{\text{ROOT}}$, and these are separate syntactic objects.

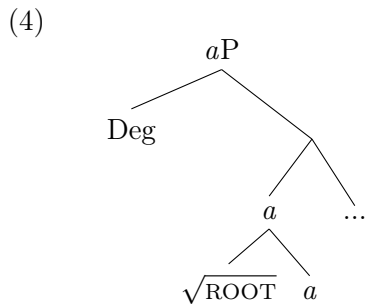
For the typical position of adjectives in the nominal domain, I further assume a complex nominal domain in which features are distributed across several heads: in particular, a head Num bears number features (Ritter 1993; Kramer 2016b; among many others) and the category-defining head n bears gender features (Lowenstamm 2008; Kramer 2015, 2016a; Adamson and Šereikaitė 2019; among others).² I follow many authors (Hankamer and Mikkelsen 2005; Dost and Gribanova 2006; Kramer 2010; Norris 2014; among others) in taking a Ps to be n P adjuncts (pace Abney 1987; Embick and Noyer 2001; Murphy 2018; a.o.). This representation of adjuncts will matter for the formulation of e.g. postsyntactic

²For much of this dissertation, I will omit NumP for expository purposes; much of the analytical work here would be unaffected if number features are placed instead on n .

movement rules. The basic structure of the nominal domain is thus as in (3).



A further issue concerns the internal structure of *aP*. I adopt the analysis of *aP*s, where degree structure is merged as a specifier to *aP* (see Morzycki 2016 for discussion and references). This particular assumption matters for the formulation of node-sprouting at the level of the MWd and the movement of Deg to *a* in synthetic degree forms; see Section 1.3 and Section 1.4 for discussion.



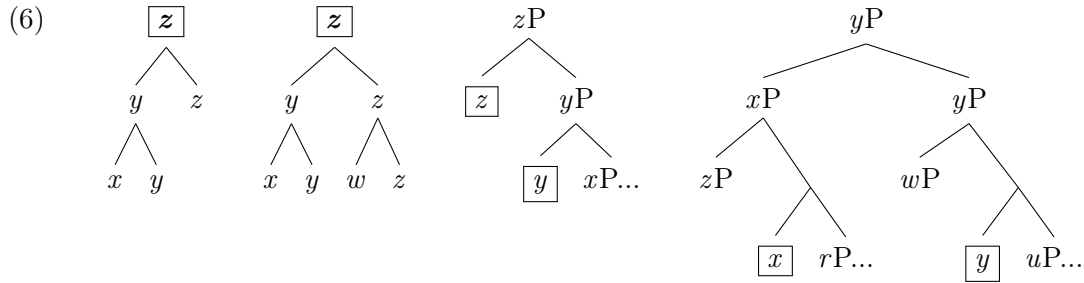
1.1.2 Morphological words and subwords

I adopt the distinction between morphological words (MWds) and subwords (SWds) made by Embick and Noyer 2001, 2007; Arregi and Nevins 2012; a.o.

- (5)
- a. At the input to Morphology, a node X^0 is (by definition) a *morphosyntactic word* (MWd) iff X^0 is the highest segment of an X^0 not contained in another X^0 .
 - b. A node X^0 is a *subword* (SWd) if X^0 is a terminal node and not an MWd.

(Embick and Noyer, 2001, 574)

In slightly different terms, MWds are maximal (potentially complex) heads, which I assume can be assembled i) in the narrow syntax by head movement or by the direct merging of two heads, or ii) in the postsyntax by postsyntactic movement (or by a combination between (i) and (ii)).³ The difference between MWds and SWds is illustrated in (6) – of the nodes represented in the trees, only boxed *z* nodes are MWds.



The concept of the MWd is important for various postsyntactic processes, including linearization, movement, and dissociation (or ‘node-sprouting’). It is also relevant to the mapping from morphosyntax to phonology, an issue not addressed in this dissertation (see Shwayder 2015 for recent work).⁴

1.1.3 Linearization

I adopt the view that linearization is determined postsyntactically. Specifically, I adopt the view of linearization from Embick and Noyer 2001; Embick 2007b (see also Kramer 2010; Embick 2010). Linearization occurs in several steps. First, adjacency statements are generated from the syntactic structure, and these statements encode information about the order between syntactic elements, such as the order between head and complements. These statements are formally notated using the operator *, meaning ‘is left-adjacent to’ ($X * YP$ thus means that ‘X precedes YP’).

Second, concatenation statements are generated between adjacent MWds and between

³Head movement is a matter of a great deal of theoretical debate (see e.g. Arregi and Pietraszko 2018 and Harizanov and Gribanova 2018 for recent discussions). I assume with Harizanov and Gribanova (2018) that these movements are distributed across narrow syntax and PF, but I will only consider linear movements and Lowering (or Lowering-like) movements to be postsyntactic.

⁴I assume phonological processes (e.g. devoicing, epenthesis, etc.) are run following Vocabulary Insertion.

adjacent SWds, using – respectively – the operators \frown and \oplus . By hypothesis, concatenation is restricted by type along the lines in (7).⁵

- (7) **Typed Linearization Hypothesis:** Statements of concatenation are typed; i.e, they relate only elements of like type. There are at least two types: M-Words and Subwords. Where upper case X,Y are M-Words and lower case a,b are Subwords, linearization procedures generate two types of concatenation statements, $X \frown Y$ and $a \oplus b$. No such statements exist between objects that are not identical in type.

(Embick, 2007b, 319)

Lastly, there is a chaining process, which chains together concatenated elements to produce “a linear representation that can be employed by the input/output system” (Embick, 2007b, 316) (see Shwayder 2015 for more recent in-depth discussion).

Adjacency and concatenation statements are relevant for postsyntactic movement operations discussed in the dissertation; see Section 1.4. By hypothesis, targets of postsyntactic movement are defined locally in terms of linearization and concatenation statements (cf. Embick and Noyer 1999, 2001).

Having laid out the basic assumptions that frame the proposals of the dissertation, I now turn to one of the central claims, which says that postsyntactic operations distinguish between how they are triggered and how they are executed. This constitutes a crucial point of departure from previous work.

1.2 Postsyntactic Operations: The Format of Rules

I adopt a serial derivational model of the postsyntax, along the lines of e.g. Embick and Noyer (2007); Arregi and Nevins (2012); Harley (2014), with possible operations including postsyntactic movement (See Section 1.4), node-sprouting (Section 1.3), impoverishment

⁵I assume that syntactic structure ‘persists’ through the postsyntactic derivation until the point of concatenation, at which point structure ‘flattens’ into a linear string of concatenated elements. Because concatenation statements distinguish MWds from SWds, which are defined structurally, some forms of structural information continue to persist past this point. Note also that cyclicity will play some role in further restricting local relations for e.g. allomorphy; see e.g. Embick 2010.

(see Section 2.2), etc., which are ordered with respect to each other.

However, I depart from previous work in one crucial respect, namely, how postsyntactic rules are composed. The familiar format for rules in phonology from SPE (Chomsky and Halle, 1968) has been assumed (either explicitly or implicitly) in various rule-based theories of morphosyntax. The format is as follows:

(8) SPE-style rule (e.g. Chomsky and Halle 1968, 374)

$$A \rightarrow B / X_Y$$

Informally, the rule states that A changes to B when it occurs between X and Y. One important thing to notice about this type of rule is that A is not just the element that is changed; it is also part of the condition for application of the rule. In other words, i) the presence of A is necessary for triggering the rule and ii) A is the element that is changed.

For the SPE-type rule, at a derivational stage when the rule could apply, there are two possible outcomes: the rule applies when A is between X and Y or ii) the rule does not apply and the derivation proceeds. There is no *crash* option, in which the rule is triggered but cannot be executed.

As a basic illustration, consider definiteness suffixation in Danish as it is described by Embick and Marantz (2008) (see Section 1.4 for discussion). When D is definite and it is MWd-concatenated with a noun, then D adjoins to *n*. If it is not, then the movement does not occur (and D is pronounced *in situ*). This rule is formulated as follows:

(9) $D[DEF] \wedge n \rightarrow [[n] D[DEF]]$ (Embick and Marantz, 2008, 43)

When an adjective intervenes, the conditions on the rule are not met, because D is not concatenated with *n*. The rule is not triggered, and therefore does not apply; the derivation then continues, and D is pronounced as a non-suffixal article.

(10) a. hest-en / *den hest
 horse-DEF / DEF horse
 'the horse'

- b. *gamle hest-en / *den gamle hest-en / ✓den gamle hest
 old horse-DEF / DEF old horse-DEF / DEF old horse
 ‘the old horse’ (Embick and Marantz, 2008, 40-43)

For SPE-style rules, these are the two options: apply or do not apply. But I argue in this dissertation that we find a third option: trigger a rule but fail to execute it, resulting in a crash. I therefore do not adopt the SPE rule schema; instead, I claim that all postsyntactic rules take the following form:

(11) **Proposed Rule Schema**

If α holds, perform R

$R: A \rightarrow B$

This notation explicitly distinguishes between the conditions on application for the rule and the specified change itself. The rule format allows for a certain type of grammatical disruption (i.e. a crash) to occur, whereby α holds, but R cannot be executed. This would happen, for example, if the existence of some element A is part of the conditions α that trigger R , and R is specified to move A to another position. However, the position of movement is specified within the change in R itself, but not for the conditions in α . The result will be that the system expects to move A but cannot, causing a crash.

For a general idea of how this type of crash would work, consider Bulgarian definiteness marking, which essentially applies to the linearly first inflected element in a nominal, such as a prenominal adjective (12-b) (see e.g. Franks 2001, and Sections 1.4 and 2.3 for extensive discussion). Some adjectives in the language are exceptionally uninflected. When these adjectives are prenominal, for some speakers, it is impossible to place the definite marker on any element, and consequently, there is no definite version of the noun with the affixal article (cf. Halpern 1995) (13-b).

- (12) a. interesna kniga
 interesting.AGR book
 ‘an interesting book’

- b. interesna-ta kniga / *interesna kniga-ta
 interesting.AGR-DEF book / interesting.AGR book-DEF
 ‘the interesting book’
- (13) a. erbap čovek
 skillful person
 ‘a skillful person’
- b. *erbap-at čovek / *erbap čovek-at
 skillful-DEF person / skillful person-DEF
 ‘the skillful person’

In brief, the analysis of the grammar of these speakers says that when D is definite, it moves to a neighboring element. Thus the triggering condition – definiteness on D – is satisfied. However, when D tries to affix itself to the uninflected adjective, it cannot, thereby causing a crash. See Section 2.3 for details of the implementation of this analysis.

To be precise about what types of derivational crashes arise due to ‘disruptions’ in postsyntactic operations, I propose that there are two types of contextual specifications that are part of rules: i) the conditions on *triggers* and ii) the conditions on *operands*. Conditions on triggers are the more familiar ones from SPE-style rules; the rule is performed if and only if the conditions on triggers are met. This is also familiar from the formulation of postsyntactic rules in DM:

- (14) *Rules Apply*: Perform a computation when the structural description of the rule is met. (Embick and Marantz, 2008, 27)

This is still a feature of the current theory; if the conditions on triggers are not met, then the result is that the derivation continues without applying the rule (not a crash). Where things can go wrong is when a rule is triggered, but the way that the rule is represented is such that the rule cannot be executed. I refer to these conditions that are ‘internal’ to the execution of the rules as *conditions on operands*, which can fail to be met. When a rule has been triggered, but the conditions on operands fail to be met, the result is a crash, yielding ungrammaticality.

As an abstract illustration, consider a situation in which X and Y are local to each other – for concreteness, we can take it to be local because of * adjacency (see Section 1.1.3). A rule R has a specified change of deleting a feature $[\beta]$ when it is triggered.⁶

(15) If $X * Y$, perform R
 R : Delete $[\beta]$ on X

(15) says first that a rule R is triggered when X and Y are adjacent. This locality property is a condition on the triggering of R . The second part is the actual rule itself, which deletes the feature $[\beta]$. This too has conditions, which are not part of the description of the conditions on triggers, namely: i) there is a feature $[\beta]$ and ii) that feature is on X. These are conditions on the rule's operands. Consider now what happens given three different inputs:

(16) a. X b. $X[\beta] * Y$ c. $X * Y$

In the (a) case, the triggering condition is not met because there is no local Y – thus no rule applies and the derivation proceeds with X being unchanged. In the (b) case, R is triggered because X and Y are adjacent, and then the feature $[\beta]$ is deleted; the output is then simply $X * Y$ (without $[\beta]$). In the (c) case, R is triggered, but there is no feature $[\beta]$ to delete. Consequently, the system “throws an error”; that is to say, it crashes.

It is typical in rule-based approaches to assume that, when a rule cannot apply, it does not apply, and the derivation proceeds. In the current theory, if a rule has to apply (because it is triggered) but it cannot, then the derivation crashes. I will use the term *derivational trapping* throughout the dissertation to describe the circumstance in which a rule is triggered but the system cannot execute a triggered rule.⁷

⁶As is conventional in DM, I assume an underspecification model, whereby the conditions of a rule are satisfied when they specify a subset of the properties of the input.

⁷According to this view, *all* postsyntactic operations are ‘forcing’, in the sense that, if their conditions on triggers are met, then the change specified by the operation must apply in order for the derivation to proceed.

- (17) **Derivational Trapping:** When the conditions on triggers for a rule are met, but the conditions on operands are not, the system cannot ‘escape’ the rule and proceed with the derivation. The result is a crash.

An analogue to derivational trapping exists in the domain of semantics/pragmatics, namely the notion of ‘presupposition failure’ (see e.g. Stalnaker 1974; Heim 1983; von Stechow 2004), as exemplified by (18).⁸

- (18) Mary has never been to Greece before. This summer, she’s finally going to/ #revisiting Crete. (vs. Mary visited Greece many times in her youth. This summer, she’s finally revisiting Crete.)

For (18), speakers find it difficult to evaluate whether the sentence with *revisiting* is true or false. This difficulty is attributable to the fact that the presupposition of the verb *revisit* (that Mary has previously been to Crete) is inconsistent with the previous sentence, which entails that Mary has never been to Crete before. In semantics/pragmatics, a distinction is crucially made between the truth-conditional content of an expression (for *revisit*: x visit y), and its presuppositions (x has previously been to y). While the primary function of an item is to contribute to the truth-conditional content of a sentence, its presuppositions serve as domain conditions on the context, which must be met in order for truth-conditional content to be defined. In the case of presupposition failure, because the presupposition cannot be met, the expression cannot be mapped to a truth value or context update (a semantic output). Presuppositions in semantics/pragmatics are parallel to our conditions on operands, which could be conceived of as presuppositions for the input to a rule. In the case of derivational trapping, the grammar cannot get to a formal output when the presupposition is inconsistent with the actual input.

It could be objected that the rule above in (15) would have been easy to “correct” such that no derivational trapping would occur, if the conditions were rewritten such that the

⁸A special thanks to Kajsa Djärv (p.c.) for very helpful discussion and comments on this issue and its presentation.

operand conditions were built into the conditions on triggers. The relevant conditions would then look as follows:

- (19) If $X[\beta] * Y$, perform R
 R : delete $[\beta]$ on X

In this case, the (c) description from (16) would just lead to R not being triggered, and the derivation would proceed without crashing.⁹ But, by assumption, there are no homunculi in the grammar tinkering with how the rules of an adult grammar are encoded to handle unexpected or otherwise unaccommodated inputs (this would be a type of grammar ‘debugging’). The system proceeds automatically, and if there is a ‘bug’ because of how the conditions on operands are stated, then the result is a crash.¹⁰

One question arises as to the relation between the conditions on triggers of the current model and the well-formedness requirements or constraints present in ‘rules and repairs’ models (e.g. Noyer 1992, 1997; Calabrese 2008; Arregi and Nevins 2012). In rules and repairs models, the changes that are specified by rules are motivated by negative *output* constraints, such as feature co-occurrence restrictions or positional constraints (e.g. *NONINITIALITY from Arregi and Nevins 2012). In contrast, the conditions on triggers of the present model are stated positively and are conditions on *inputs*; that is, certain configurations at a point in the derivation trigger a change (see Section 1.2.3 below on negative constraints). The relation between the triggering and the change itself is derivationally *immediate* in the present account, but this is not (necessarily) true for the constraints that motivate rules in rules and repairs models. In essence, the conditions in the current model can only be stated

⁹A derivational trapping situation is potentially more likely in the postsyntactic movement operation described for Bulgarian above compared to the toy deletion rule, with the specified target of movement not present in the α conditions on triggers.

¹⁰It is fair to ask why the grammar would ever encode anything this way, rather than checking the input to verify that all of the essential ingredients of executing an operation are there. I can offer two related speculations. First, an economy principle is at play that allows the grammar to omit certain pieces of information from triggering conditions. This could happen if there is an otherwise robust implicational relation (if X is present, so too is Y), leading the system to ‘expect’ certain conditions to hold in the actual application of the rule. Second, while grammars may be well-designed overall, they too are susceptible to ‘programming’ errors. If this type of analysis pursued in the dissertation is on the right track, the issue certainly warrants further investigation.

in terms of the structural and linear relations that hold at a given point in the derivation (see e.g. Section 1.1.3 on linearization operators), but this is not typically the case for output constraints.

One may well wonder how often the circumstances arise that lead to derivational trapping. I assume that the learner’s grammar develops such that the posited mechanisms are maximally general, covering a broad range of grammatical situations. That is, I assume the learner is fairly competent at inferring a system of postsyntactic rules from Primary Linguistic Data. That being said, it is possible for the developed system to be structured such that it fails to ‘expect’ certain kinds of expressions (that it has not encountered often enough), which can therefore not be handled by the postsyntactic part of the grammar, causing a crash. Because adult grammars are generally well-designed (by hypothesis), we predict to see crashes in exceptional corners of the language, where the exceptions are tolerated for some purpose, but perhaps not for all. This is one of the foci of Chapters 2 and 3, where it is argued that exceptionally inflectionless elements can cause problems in the postsyntax. That being said, I also argue that we observe crashes in strikingly general circumstances such as coordination and for certain types of movement; see Chapter 4.

In sum, according to the current proposal, postsyntactic operations are bifurcated: certain conditions need to be met in order for a rule to be triggered, and certain conditions need to be met in order for the rule to be executed.¹¹ When the former conditions are satisfied and the latter are not, then the result is derivational trapping.¹² Section 1.2.1 identifies some precedent for this concept from the morphosyntactic literature; Section 1.2.2 briefly

¹¹There is precedent in the phonological literature for distinguishing between the structural description of a rule and the structural change that the rule specifies. For example, Kenstowicz and Kisseberth (1979) offer a ‘transformational’ formulation of rules like metathesis that distinguishes between the two. More recently, in their work on morphotactics, Arregi and Nevins (2012) formulate operations both in the SPE rule format and in a way that has clear separation between structural conditions and the actual change (similarly to Kenstowicz and Kisseberth (1979)). However, as far as I can tell, there has been little discussion of the type of crash that can arise due to the rule bifurcation outlined here and that is explored in the dissertation.

¹²As Dave Embick (p.c.) observes, the rule bifurcation proposed here leaves open the possibility that the conditions on triggers and the conditions on operands are subject to different locality considerations. In other words, what constitutes a possible α for the rule schema in (11) may be distinct from what constitutes the possible conditions in R . An analogue comes from the domains relevant for contextual allomorphy and morphophonological alternations, which are argued by Embick (2013) to be distinct.

addresses possible issues of overgeneration; and Section 1.2.3 clarifies the role (or lack of a role) of negative constraints in the current model.

1.2.1 Precedent for disruptions

There is some precedent in the morphosyntactic literature for the idea that rules can cause crashes; I discuss two related examples here.

In Embick and Noyer’s (2001) analysis of English tense lowering, they claim that T adjoins to *v* via Lowering, which they take to be a postsyntactic operation. Lowering is not blocked by intervening adverbs (see also Bobaljik 1995, 65-78); this is demonstrated for the adverb *completely*, which adjoins lower than TP and occurs with verbs to which Tense has been lowered (20).

- (20) a. John has *completely* destroyed the opposition.
b. *?John *completely* has destroyed the opposition.
c. John *t completely* destroy-ed the opposition. (Embick and Noyer, 2001, 585)

Strikingly, while intervening adverbs do not block Tense-lowering, constituent negation of the verb does (21).¹³ There is in fact no grammatical ‘repair’ strategy, as *do*-support is not triggered by constituent negation, unlike sentential negation.

¹³Bjorkman (2011, 201) disputes the claim that constituent negation does not trigger *do*-support on empirical grounds. Employing Klima’s (1964) classic tag-question diagnostic (i-a)-(i-b), Bjorkman shows that the example in (i-c) takes a negative tag, and concludes that the sentence’s negation is constituent negation. If this is true, then constituent negation can trigger *do*-support, and thus the data in (21-a) would be less surprising.

- (i) a. They always go, don’t they?
b. They don’t always go, do they?
c. They always don’t go. Don’t they? (Bjorkman, 2011, 201)

There are at least two issues with this. First, the uncontracted data in (21-b) would remain puzzling if constituent negation triggered *do*-support. Second, as various authors have pointed out, polarity of the tag is affected by what bears the widest scope in the clause. For example, Iatridou and Sichel (2008) show how the scope of a negative DP in object position affects whether a tag question is negative or positive.

- (ii) a. Bill has to do no homework tonight, does he/*doesn’t he? (Bill is allowed to remain without homework)
b. In order to understand how the other half lives, Bill has to get no new toys for a while, doesn’t he/*does he? (Bill has to stay without new toys) (Iatridou and Sichel, 2008)

- (21) a. *John always not agree-d.
 b. *John did always not agree. (modified from Embick and Noyer 2001, 585)

When an auxiliary or modal is present (22-a), or *do*-support is triggered by another factor such as T-C movement (22-b), constituent negation of the verb is grammatical.

- (22) a. John can always not agree.
 b. Did he always not agree? (modified from Embick and Noyer 2001, 585)

The ungrammaticality of (21) is explained by Embick and Noyer as follows. The conditions on *do*-support are syntactic (see also Bjorkman 2011), being triggered when e.g. the complement of T is NegP rather than *v*P, as in the case of sentential negation. In contrast, constituent negation involves a head Neg that merges with *v* but does not project. In this environment, *do*-support is not triggered because T's complement is still *v*P.

- (23) a. Sentential Negation (*do*-support triggered)
- ```

graph TD
 TP --> T1[T]
 TP --> NegP[NegP]
 NegP --> Neg1[Neg]
 NegP --> vP1[vP]

```
- b. Constituent Negation (*do*-support not triggered)
- ```

graph TD
  TP --> T2[T]
  TP --> vP2[vP]
  vP2 --> Neg2[Neg]
  vP2 --> Node1[ ]
  Node1 --> v3[v]
  Node1 --> Ellipsis[...]
  
```

In the Lowering of Tense, the operation picks out “the closest MWd of the complement” of T (p. 589). For constituent negation, the head Neg is a head adjoining to *v*P, thus having a dual status of being both minimal and maximal (cf. Chomsky 1995). In their

The tag in (i-c) is thus not sufficient for showing that this is constituent negation; rather, *do*-support occurs here with sentential negation, and the negative tag emerges because negation is out-scoped by *always*. See De Clercq (2013, Chapter 8) on the role of scope-taking elements in tag questions.

system, then, the Neg head counts as its own MWd in the complement of T, and, being structurally higher than the head *v*, is visible to the Tense-lowering operation. However, problems arise with constituent negation because the Tense-lowering operation *must* apply – its structural conditions are met – and yet Lowering *cannot* apply because Neg is not the right type of object to which T can lower (alternatively, Neg-T is an illicit object).¹⁴ *Do*-support is not a Last Resort operation, so it cannot ‘repair’ the problem, either.¹⁵ The idea that Tense-lowering must apply (its triggering conditions are met) but cannot (i.e. because Tense cannot lower onto Neg) is much like a derivational trapping analysis.

The tension between ‘must apply’ and ‘cannot apply’ is also discussed elsewhere in the morphosyntax literature. Preminger (2011, 2014) discusses a type of defective intervention in French, which has the property that it lacks a grammatical output. In the context of the raising verb *sembler* ‘seem,’ an argument raises from the embedded infinitive to the matrix subject position (24-a). The verb *sembler* can also occur with a ‘dative experiencer’ marked with the preposition *à* (24-b). However, it is ungrammatical in (24-c)-(24-d) to have *sembler* occur with a dative experiencer and an embedded infinitive.

- (24) a. Jean₁ semble [_t₁ avoir du talent].
 Jean seems have.INF of talent
 ‘Jean seems to have talent.’

(Preminger 2011, 122, originally in McGinnis 1998, 90)

- b. Il semble (à Marie) [que Jean a du talent].
 It seems to Marie that Jean has of talent
 ‘It seems to Marie that Jean has talent.’

(Preminger, 2011, 113)

¹⁴Embick and Noyer (2001) do not offer a perspicuous explanation of how the grammar states this, but it could be that a derivational trapping situation arises because the Lowering operation is specified in its execution to adjoin to *v*.

¹⁵Embick and Noyer’s (2001) account correctly predicts that constituent negation is licit when Lowering to the verb is not triggered, as in the context of a modal (i). Secondly, the account correctly predicts that negation belonging to the same MWd as the verb will not block Lowering (ii).

- (i) John can always not agree. (ii) John *t* quickly disagree-d with Bill.

(Embick and Noyer, 2001, 590)

- c. *Jean₁ semble [à Marie]_{DAT} [t₁ avoir du talent].
 Jean seems to Marie have.INF of talent
 ‘Jean seems to Marie to have talent.’

(Preminger 2011, 122, originally in McGinnis 1998, 90)

- d. *[À Marie]₁ semble t₁ [Jean avoir du talent].
 To Marie seems Jean have.INF of talent
 ‘Jean seems to Marie to have talent.’

(Preminger 2011, 114, originally in McGinnis 1998, 90)

Preminger attributes the problem to an interaction between an agreement operation and the operation that moves a nominal to subject position. In his system, the input to the movement operation in French is the output of agreement. When the agreement operation identifies a dative argument with which it does not want to agree, the operation is aborted.

- (25) $\text{FIND}_\phi(f)$: Given an unvalued feature f on a head H_0 , find an XP bearing a valued instance of f . If such an XP is found, check whether its case is allowed by *case-discrimination* –
yes → assign the found value to H^0
no → ABORT.

(Preminger, 2011, 128)

When the operation is performed for matrix T in the derivation of (24-c) or (24-d), the operation finds the dative experiencer, which is not allowed by case-discrimination (see a.o. Bobaljik 2008; Preminger 2011), so it aborts. Since it produces no output, this becomes a problem for the movement operation in (26).

- (26) Movement to Canonical Subject Position: $\text{Move}(\text{XP targeted by Find}_\phi)$

(adapted from Preminger 2011, 133)

While aborting the agreement operation would by itself not cause a crash, a problem arises for the movement operation, which has no defined input to use from the agreement operation. Consequently, the derivation crashes. This too is parallel to the distinction being

made in the current theory.¹⁶

Having identified precedent from the literature, in the next subsection, I discuss potential issues with overgeneration.

1.2.2 Overgeneration and ungrammaticality

If we separate the triggering conditions for rules from the operands of the rules themselves, the question arises as to just how divorced the two can be from each other. In principle, nothing in the architecture of the rules stated so far rules out the possibility that the conditions on triggers have zero overlap with the conditions on operands. This means a rule of the type in (27) would be formulable:

(27) If A is present, perform R

$$R: B \rightarrow C$$

The question of rule substance and naturalness is not limited to this framework; see Vaux and Myler 2017 for recent discussion. I assume that various factors affect the form and content of rules, including markedness and economy principles, language history, etc. These factors make it unlikely that a rule like (27) will be learned. Somewhat more restrictively, I propose that a general principle holds:

(28) For the set of conditions α whose satisfaction would trigger a rule R , and for the set of conditions on operands β necessary for the execution of R , $\alpha \cap \beta \neq \emptyset$.

The principle in (28) rules out non-overlapping conditions, thereby ruling out an operation like (27). Note that this is not the only restrictive principle on how the conditions are defined; conditions on either triggers or operands can only be stated in local terms, with locality generally defined by *adjacency* at the stage at which the operation applies. The way adjacency is defined will depend on what types of operators relate elements at that point

¹⁶Preminger (2011, 2014) states things in terms of *obligatory operations*; in contrast, the current view is that operations that are triggered in certain circumstances can give rise to derivational trapping – these are not unconditionally obligatory operations.

in the derivation; see e.g. Section 1.4 below for some relevant definitions with respect to movement.

One further caveat concerns ungrammaticality. The current theory is being used to capture certain patterns of ungrammaticality, but it does not exhaustively identify the circumstances under which expressions will be deemed ungrammatical. Derivational trapping is one source of ill-formedness; more broadly, an expression will be ungrammatical if it is ungenerable, i.e., no combination of the input and the rules derives it.

In the next subsection, I discuss the account as it relates to negative constraints in the grammar.

1.2.3 Rules and negative constraints

One important point of clarification concerns the role of constraints in the grammar. Much of the work in Distributed Morphology assumes the existence of negative constraints – such as feature co-occurrence restrictions – which trigger ‘repair’ operations such as impoverishment (Noyer 1992, 1997; Calabrese 2008; Arregi and Nevins 2012). ‘Rules and repairs’ models are attractive in that they capture effects that are expected from serial derivation – such as opacity effects – while at the same time capturing the existence of conspiracies, the absence of certain outputs, and the seemingly teleological orientation of rules to convert inputs into well-formed expressions (see Vaux 2008 for some related discussion).

If my claims about rule format are correct, a certain type of interaction between rules and negative constraints must be precluded. For derivational trapping configurations, an operation can be triggered but will cause a crash if it cannot be executed. One could imagine, however, a system in which the application of postsyntactic rules is ‘free’, such that the system can ‘escape’ from a Derivational Trap. If this were allowed to happen, another option would be invoked instead, such as a ‘Last Resort’. Taken to its extreme, this could mean that all (well-formed) syntactic inputs would have outputs, because any inputs moving along problematic derivational paths would be ‘diverted’ to another path. Allowing this to occur would be empirically problematic (not all well-formed syntactic expressions

have well-formed morphological outputs; see e.g. Section 2.1). Escaping from derivational traps can therefore not be allowed to happen in the current system – a principle which I state as follows:¹⁷

- (29) **No Rule Freedom:** There are no *ad hoc* rules or means of escape when the conditions on operands for a rule fail to be satisfied.

Without this principle in place, we would have no way of capturing patterns of ungrammaticality that should be attribute to the disruptions of operations. What is not precluded by this is the existence of negative constraints (e.g. the *NONINITIALITY constraint of Arregi and Nevins 2012). While I leave open the possibility that negative constraints play some active role in the synchronic grammar, in general, I will adopt the view that there are few if any learned, language-specific negative constraints. I take this to be in line with the acquisition literature, as negative constraints would be learned from indirect negative evidence ('I've never heard X'), which has been pointed out to be highly problematic (Yang 2015, 2016; Irani 2019, and references therein).

Regarding language-specific requirements such as 'adjectives bear agreement morphology', I do not take such requirements to be encoded as negative constraints barring configurations in which adjectives lack agreement morphology. These requirements are instead encoded as 'positive' conditions for rule application of e.g. node-sprouting. When a learner encounters a general pattern of adjectives bearing agreement morphology, the learner posits a rule such as: in the context of MWd *a*, adjoin an agreement morpheme to *a*. This contrasts with the received view that 'morphological well-formedness requirements' are (or can be) represented as prohibitions against certain types of expressions (such as adjectives lacking agreement morphology). I will continue to use the term 'morphological well-formedness requirements' in the dissertation only as a *façon de parler*; it does not refer to negative constraints prohibiting certain configurations.

The issue is more complex, in that many researchers in DM take negative constraints,

¹⁷Under this view 'repairs' and 'Last Resort' have no theoretical status in the synchronic grammar, though they remain useful descriptive terms for operations that apply in cases when an another operation fails to.

such as those that stem from markedness relations, to be part of Universal Grammar. The constraints could then be unlearned in the presence of positive evidence in language acquisition, in which case, no appeal to indirect negative evidence would be necessary. While this may be reasonable for some types of constraints, language-specific requirements such as the ones discussed in this dissertation (e.g. the presence of agreement morphology on adjectives) seem unlikely to belong to the class of UG constraints. I thus generally refrain from invoking negative constraints.

To summarize, this section described the theory of postsyntactic operations pursued in the dissertation, whereby operations distinguish between conditions on triggers and conditions on operands; consequently, some derivations lead to derivational traps. The ramifications of this shift are explored throughout the dissertation. In the next two sections, I describe the mechanics of two important postsyntactic processes: node-sprouting, which produces (among other things) agreement morphology, and postsyntactic movement, whose locality is defined by linearization and concatenation statements. Establishing the workings of these operations provides a framework for discussing issues of interaction effects, including derivational traps.

1.3 Node-Sprouting and its Targets

In this section, I offer a view of the locus of node-sprouting, the postsyntactic operation which produces (among other things) agreement morphology. I suggest that node-sprouting can produce morphology on terminals, morphological words (MWds), and phrases.

The items that are referred to as ‘morphemes’ are not limited to the objects from the narrow syntax. In DM, some morphemes are syntacticosemantically inert, in that they may *reflect* syntactic structure but are not direct representations that figure into syntactic composition. These morphemes are said to be *dissociated* (in Embick’s 1997; 2000 terminology), and are inserted by language-specific postsyntactic rules (Kramer 2009; Norris 2014; Choi and Harley 2019; among many others). I henceforth refer to the insertion process as ‘node-sprouting’, following the terminological change advocated for by Choi and Harley (2019)

(who attribute the term to Alec Marantz, p.c.).

I follow other authors who assume – either explicitly or implicitly – that a language’s dissociated morphology is present to satisfy ‘morphological well-formedness requirements’ (Marantz 1991; Halle and Marantz 1993; Embick and Noyer 2001; Choi and Harley 2019; a.o.), though more specifically, I assume that well-formedness requirements as they pertain to agreement morphology are formally encoded in terms of node-sprouting rules. In other words, language-specific well-formedness requirements such as ‘adjectives take on agreement morphology’ are formalized in the synchronic grammar only by rule (not by negative constraints). The node-sprouting rule could specify that for every adjectival MWd, an agreement morpheme is sprouted from that MWd.¹⁸

Typical examples of dissociated morphemes from the literature include theme vowels – in, for example, Catalan verbal morphology (Oltra Massuet, 1999, 13-14) and Italian verbal morphology (Calabrese, 2015) – and agreement morphemes (Embick and Noyer 2001; Kramer 2009; Arregi and Nevins 2012; *inter alia*). Both theme vowels and agreement morphemes are taken to be i) morphologically isolable, ii) irrelevant to the narrow syntax and to interpretation, and iii) required by language-specific well-formedness considerations. Taken together, these properties are consistent with the absence of agreement morphemes in the narrow syntax and their production in the postsyntax.

One underexplored area in this domain is what constitutes a possible target to node-sprouting, though I argue that at least some cases of node-sprouting occur at the MWd. Most proposals have taken the target instead to be a terminal node, which appears to be correct for some cases. For example, in her study of Catalan morphology, Oltra Massuet (1999, 13-14) proposes that Catalan theme vowels are adjoined to every functional head (such as *v*, Mood, and Tense); she also proposes that a finite agreement morpheme is sprouted on T.

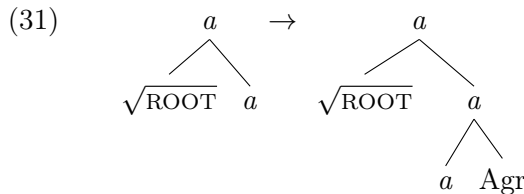
The terminal has also been claimed (or assumed) to be the target of adjunction for agreement morphology. In the domain of agreement morphemes more broadly, several proposals involve rule schema such as that in (30), whereby the process targets a terminal node.¹⁹

¹⁸See the discussion of negative constraints in Section 1.2.

¹⁹This is distinct from syntactic work which posits separate Agr projections (e.g. Pollock 1989) or separate

(30) Agr Node Insertion: $X^0 \rightarrow [X^0 \text{ Agr}^0]_x$ (Norris, 2014, 152)

When X is defined as a particular category – such as a (adjective) – then this type of postsyntactic rule is meant to reflect the fact that the language inflects adjectives with an agreement affix. This is accomplished through head adjunction to X^0 :



One proposal I am aware takes the phrase to be a possible target of node-sprouting (Hanink, 2018a,b). Hanink argues that phrasal inflection best characterizes the inflection on German prenominal adjectives. This accounts captures the generalization that inflection goes on the right edge of the modifier (32), irrespective of whether it is the head adjective (see also Roehrs 2006); see Chapter 3 for discussion and argumentation related to the German pattern.²⁰

- (32)
- a. ein [brauner als braun]-es Auto
a browner than brown-AGR car
‘a browner-than-brown car’
 - b. das [so schnell wie möglich]-e Aufräumen
the so quick as possible-AGR straightening.out
‘a quick-as-possible straightening out’
- (Roehrs, 2006, 222)

What seems to have little to no discussion in the literature is the morphological word (MWd) as a possible target for node-sprouting (see Section 1.1.2 for relevant definitions). I propose, however, that it is precisely at the MWd level that many ‘concord’ morphemes – such as those found on adjectives and nouns – adjoin.²¹ (33) provides a schema for an MWd operation,

projections for- ϕ probes (e.g. Baker 2008).

²⁰The word *Aufräumen* is arguably better characterized as meaning ‘straightening up’, rather than Roehrs’ (2006) suggested ‘straightening out’.

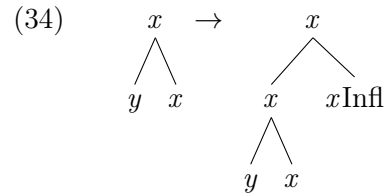
²¹I take ‘concord’ morphemes to be non-verbal agreement morphemes, which can express nominal features such as gender, number, case, and definiteness. See e.g. Norris 2014 on nominal concord.

and (34) illustrates the change from the input to the output.

(33) **MWd Node-Sprouting**

For an MWd x^0 , perform R

R : Adjoin $x\text{Infl}$ to x^0 .



An important property of MWd node-sprouting that it does not share with more general head-targeting operations is that it will be ‘suppressed’ when a head lacks MWd status. For the input in (34), for instance, a rule targeting MWd ys would not be applicable, because there is no head y that constitutes an MWd.

An MWd analysis of (some cases of) agreement morphology captures the intuition that agreement inflection often goes on ‘words’. Consider, for example, adjectives in Icelandic, which are inflected for gender, number, and case. Assuming derivatives such as deadjectival nominalizations are built as $[\sqrt{\text{ROOT}} a] n$, an analysis that targets adjectival heads for inflection incorrectly predicts that deadjectival nominals should have inflectional morphology occurring between the adjectivizing head and the nominalizing head. But this is not what happens; there is no adjectival inflection. This is expected under the MWd account.²²

- (35) trúverð-ug-ur / trúverð-ug(*-ur/*-t)-leik.a
 credible-ADJ-M.SG.NOM / credible-ADJ-AGR-NMLZ.AGR
 ‘credible / credibility’

The MWd analysis also captures the often-observed pattern for compounds, assuming compounds are formed as complex heads (Harley 2009; among many others). If (and when) compounds are treated as a single MWd, then they should not bear word-internal inflection. Considering the case of adjective-adjective compounds in Icelandic, we can observe that this is indeed the case.²³

²²I assume recategorized material (deadjectival and deverbal nominalizations) are formed in the syntax, either through head movement or the direct merging of heads; see Wood 2018 for discussion and references.

²³However, see Harðarson 2017 on nominal compounds in Icelandic for which some elements bear inflectional morphology in different structural configurations.

- (36) fransk(*-ur)-kanadísk-ur maður
 French-AGR-Canadian-AGR person
 ‘French-Canadian person’
- (37) næst-(*-i)-strík-ast-i maðurinn
 next-AGR-rich-CMPR-AGR man.DEF
 ‘the second-richest man’

Defining the target of node-sprouting as the MWd is not the same as defining the target as a ‘word’ in a Lexicalist sense. Because the postsyntactic derivation is serial and may involve movement operations (on which, see Section 1.4), a node-sprouting operation can apply to an MWd prior to a movement operation that changes its status, resulting in inflection that is internal to a phonological word. For example, Embick and Noyer (2001); Embick (2007b) provide a postsyntactic analysis of the positioning of the Latin conjunction element *-que*, which appears as a suffix to the first element in the second conjunct (38). Embick and Noyer take *-que* to originate in a position between the two conjuncts; it is then linearly displaced onto the first element of the second conjunct. Observe that, if the suffixed element is an adjective, then it will be inflected, and this inflection will appear internal to *-que*.

- (38) [bon-i puer-i] [bon-ae-**que** puell-ae]
 good-NOM.M.PL boy-NOM.M.PL good-NOM.F.PL-**and** girl-NOM.F.PL
 ‘good boys and good girls’ (adapted from Embick and Noyer 2001, 575)

This is expected if the node-sprouting operation precedes the linear displacement of *-que*; otherwise, the result would be in the unattested order *bon-que-ae*.

To take a related example, consider Icelandic definite suffixation, which has also been claimed by Ingason (2016a) to be affixed to nouns under (a certain type of) linear adjacency. In certain circumstances, this suffixation is blocked, and an independent article appears (39).

- (39) a. blái bíll-**inn**
 blue car-DEF
 ‘the blue car’
- b. **hinn** ótrúlegi veraldarvefur
 HI.THE amazing world.wide.web
 ‘the amazing World Wide Web’

Icelandic (Ingason, 2016a, 136)

Consider now the forms of the definite marker in both the independent definite article as well as the suffix. The ‘stem’ *-(i)n* is shared between the freestanding article and the nominal suffix (Pfaff, 2015). I take this to mean that this is the realization of the D morpheme. The material following this exponent is agreement morphology, varying according to gender, number, and case.

(40) (Pfaff, 2015, 33)

	ART.M	DEF.M	ART.F	DEF.F	ART.N	DEF.N
NOM.SG	<i>h-in.n</i>	-(i)n.n	<i>h-in</i>	-(i)n	<i>h-iǫ</i>	-(i)ǫ
ACC.SG	<i>h-in.n</i>	-(i)n.n	<i>h-in.a</i>	-(i)n.a	<i>h-iǫ</i>	-(i)ǫ
DAT.SG	<i>h-in.num</i>	-(i)n.num	<i>h-in.ni</i>	-(i)n.ni	<i>h-in.u</i>	-(i)n.u
GEN.SG	<i>h-in.s</i>	-(i)n.s	<i>h-in.nar</i>	-(i)n.nar	<i>h-in.s</i>	-(i)n.s
NOM.PL	<i>h-in.ir</i>	-n.ir	<i>h-in.ar</i>	-n.ar	<i>h-in</i>	-(i)n
ACC.PL	<i>h-in.a</i>	-n.a	<i>h-in.ar</i>	-n.ar	<i>h-in</i>	-(i)n
DAT.PL	<i>h-in.um</i>	-n.um	<i>h-in.um</i>	-n.um	<i>h-in.um</i>	-n.um
GEN.PL	<i>h-in.na</i>	-n.na	<i>h-in.na</i>	-n.na	<i>h-in.na</i>	-n.na

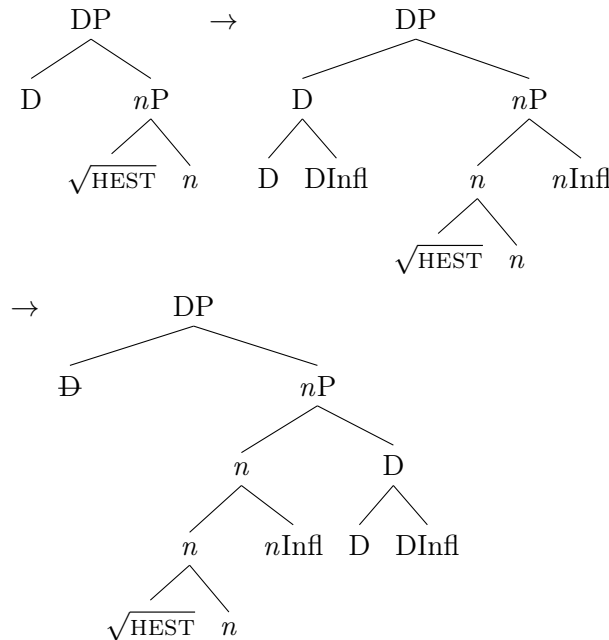
Nouns appear with gender, number, and case morphology even they are not suffixed with the definite. As a consequence, the inflected definite marker suffixes to a noun that is itself already inflected. The result is a double-inflected pattern for definite-suffixed nouns:

(41) (adapted from Ingason 2016b, bolding mine, indicating base forms)

		<i>hestur</i> ‘horse’	<i>nál</i> ‘needle’	<i>barn</i> ‘child’
		MASC	FEM	NEUT
SG	NOM	hestur -inn	nál -in	barn -ið
	ACC	hestur -inn	nál -ina	barn -ið
	DAT	hesti -num	nál -inni	barn -inu
	GEN	hests -ins	nálar -innar	barns -ins
PL	NOM	hestar -nir	nálar -nar	börn -in
	ACC	hesta -na	nálar -nar	börn -in
	DAT	hestu -num	nálu -num	börnu -num
	GEN	hesta -nna	nála -nna	barna -nna

This pattern is consistent with an ordering of node-sprouting occurring for both n and D, followed by movement of (complex) D to n :

(42) Sketched derivation for *hest-s-in-s* (horse-GEN.M.SG-DEF-GEN.M.SG)



That D is independently inflected when it appears in its unsuffixed form supports a node-

sprouting operation that targets D when it is definite, irrespective of whether it undergoes movement to *n*. When postsyntactic movement puts the D complex and *n* complex together, the result is ‘double inflection’. This type of double inflection is expected to occur in a theory in which MWds are targeted at a specific point in the derivation.

The data are consistent with a generalization about the order of postsyntactic operations, which I offer in the form of the hypothesis in (43).

- (43) **Node-Sprouting Ordering Hypothesis:** All MWd node-sprouting precedes all linearly defined MWd postsyntactic displacement.

The validity of (43) is supported by a number of other phenomena. For example, the definite marker in Bulgarian – whose realization is also sensitive to gender and number (but see Franks 2001; Arregi and Nevins 2013; Griбанова and Harizanov 2015) – suffixes to already inflected adjectives, similarly to the Icelandic definite suffixation to nouns (44). Its placement is also argued to be linearly defined; (see Sections 1.4 and 2.3.3).

- (44) interesn-a-ta žena
 interesting-F.SG-DEF woman
 ‘interesting woman’

One question that arises, however, concerns degree morphemes such as the comparative. In Icelandic, adjectival comparatives are formed synthetically, and as in many languages, the adjectival inflection appears external to the comparative morpheme.

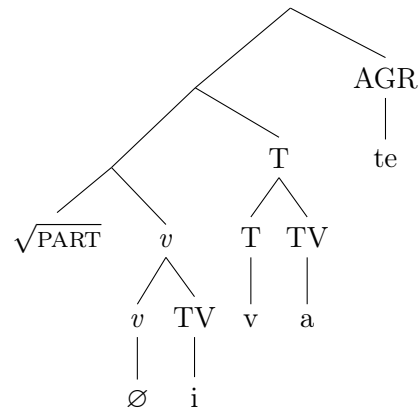
- (45) ljót-ar-i / *ljót-i-ar
 ugly-CMPR-AGR / ugly-AGR-CMPR
 ‘uglier’

There is some controversy as to how synthetic comparatives are derived; see Embick and Noyer 2001; Embick 2007a; Bobaljik 2012; Matushansky 2013 for some relevant issues, and Bhatt and Pancheva 2004; Morzycki 2016; Lechner 2019; among many others for syntacticosemantic considerations of the structure of comparatives. For current purposes, it suffices

to say that a linear displacement would be inconsistent with (43). I adopt the view instead that adjectives and comparative heads are synthesized in a postsyntactic but *structurally* defined operation rather than a linear one, which occurs prior to node-sprouting; see Section 1.4 for details.

One further caveat concerns the extent of MWd node-sprouting. I do not adopt the view that all node-sprouting is at the level of the MWd, for several reasons. First, as mentioned above, theme vowels are also taken to be dissociated morphemes, yet they often appear within a verbal form, apparently ornamenting particular heads that can be internal to phonological words (Oltra Massuet, 1999; Calabrese, 2015). Consider, for example, Calabrese’s (2015, 74) decomposition of an Italian verb, in which there are two theme vowels: the one that is typically associated with a particular class of verbs, which is sprouted from *v*, and one that sprouted from T (46) (cf. Oltra Massuet 1999, 14 on Catalan).²⁴ I thus take theme vowels to be applied to terminal nodes, not MWds.

(46) *partivate* 2.PL imperfect indicative of
partire ‘to leave’ (adapted from Cal-
 abrese 2015, 74)



Second, not all verbal agreement morphology appears at the edge of what would be an MWd in the postsyntax. A simple illustration of this comes from contracted negated auxiliaries in English, which have been argued to be derived via syntactic head movement, as the complex head consisting of the auxiliary and Neg can move together to C in matrix questions (as in *Hasn’t she left?*). If verbal node-sprouting targeted the entire complex, then

²⁴Calabrese (2015, 74) takes the target of theme vowel insertion to be “certain functional heads” – not specifically terminal nodes. (46) illustrates the structure for adjunction of theme vowels to terminals; note that this is altered from Calabrese’s formulation.

we might expect something like **have-n't-s*, contrary to fact.

Another illustration of this comes from argument clitics. There is some debate about how argument clitics combine with their verbal hosts (see e.g. Anagnostopoulou 2003; Matushansky 2006; Wood 2015; among many others), but a popular approach takes argument clitics to be D heads adjoined to other heads such as T; it is often further assumed that this takes place in syntax (e.g. Matushansky 2006). If this is indeed the case, an MWd analysis of agreement morphology would have difficulty accounting for the pattern in which a cliticized verbal element bears agreement morphology that appears internal to the clitic. This happens, for example, for particular participles in Italian (47) which are encliticized (e.g. Belletti 2007), and for *-st* clitics in Icelandic (48), which come after a verb's ϕ -agreement morphology (e.g. Wood 2012).

- (47) *conosci -u -t -a -la* / *incontr -a -t -a -la*
 know -TH -PTCP -F.SG -F.SG.CLITIC / meet -TH -PTCP -F.SG -F.SG.CLITIC
 ‘having known/met her’ Italian ‘Absolute Small Clause’ (Belletti 2007)

- (48) *sjá-um-st!*
 see-1.PL-ST
 ‘We’ll see each other later!’ Icelandic ST-clitic (Wood 2012, 83)

On the basis of this evidence, I do not claim that node-sprouting must be at the level of the MWd – instead, I propose that i) it is possible for node-sprouting to target MWds and more specifically, ii) the MWd *must* be the locus of node-sprouting for heads that bear ‘concord’ morphology, including *a* and *n*. This is consistent with the patterns of inflection observed in this section and throughout the dissertation.²⁵

To summarize, node-sprouting is a postsyntactic operation that produces (among other things) agreement morphology, and it targets terminals, MWds, or phrases. In terms of

²⁵In the case of multiple agreement morphemes realized on the same element, I assume that the addition of each morpheme requires its own node-sprouting rule. The node-sprouting rules must then be ordered with respect to each other; see e.g. Norris (to appear)). I assume the order is not arbitrary, but rather, is constrained by markedness principles. The result is that the order of agreement morphemes recapitulates the order in which these features are structured in the nominal domain (e.g. gender agreement morphemes are interior to number morphemes). Thanks to Mark Norris (p.c.) for helpful discussion on this topic.

serial order, it is claimed to precede all linearly defined movement operations, but after purely structurally defined ones. In the next section, I articulate an account of postsyntactic movement, defined locally by linearization and concatenation statements.

1.4 Postsyntactic Movement: Transparencies/Interventions

In this section, I synthesize several case studies from the literature to articulate an account of postsyntactic movement. The fundamental property of this approach is that locality of postsyntactic movement is defined by the level of the derivational stage, such that * adjacency and MWd concatenation define how elements interact with each other at a given stage.

For research identified with the Distributed Morphology framework, discussion of postsyntactic movement has often followed the model of Embick and Noyer (2001), who argue for two types of postsyntactic movement: Lowering and Local Dislocation. Lowering operates structurally – moving a head to the head of its complement²⁶ – and Local Dislocation operates linearly, moving a head to a string-adjacent head after elements have been linearized.²⁷

While I adopt key ideas from Embick and Noyer (2001), I will adopt a broader but still restricted array of possible types of postsyntactic movement, motivated by cases that have been discussed in the literature. The locality properties of postsyntactic movement operations crucially depend on how elements are defined with respect to each other both structurally and linearly (i.e. through * adjacency statements, through concatenation, etc.). This follows the same insight that led to Embick and Noyer’s distinction between Lowering and Local Dislocation, though the framework here articulates the options that one should expect given a more articulated derivation of linearization. Especially important in motivating this range of movement possibilities is the nature of ‘transparency’, that is, when elements do not intervene for the purposes of movement (cf. Bobaljik 1995, 2002).

One of the differences captured by Embick and Noyer’s (2001) system is that some op-

²⁶See Harizanov and Gribanova 2018, 485 for an alternative but related formulation.

²⁷The theory of postsyntactic movement in Embick and Noyer (2001) is largely inspired in part by Marantz (1988); Bobaljik (1995); and other work.

erations, such as the lowering of Tense in English, ignore intervening adjuncts and specifiers (e.g. *John quickly walk-ed away*), while other operations are sensitive to intervening material. As an example of the latter, Embick and Marantz (2008) provide a Local Dislocation analysis of the definite suffixation pattern in Danish (on which, see Hankamer and Mikkelsen 2005 for an opposing view). In essence, the pattern is that the definite marker suffixes to a noun (49-a) unless there is an intervening prenominal adjective, in which case, the definite marker is realized as a separate element before the adjective (49-b). Their Local Dislocation analysis correctly captures the fact that postnominal modifiers, such as prepositions, do not intervene for definite suffixation of the noun (49-c).

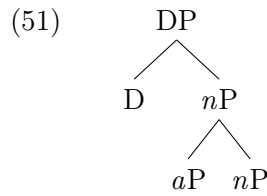
- (49) a. hest-en / *den hest
horse-DEF / DEF horse
‘the horse’
- b. *gamle hest-en / *den gamle hest-en / ✓den gamle hest
old horse-DEF / DEF old horse-DEF / DEF old horse
‘the old horse’
- c. gris-en med blå pletter / *den gris med blå pletter
pig-DEF with blue spots / DEF pig with blue spots
‘the pig with blue spots’ (Embick and Marantz, 2008, 40-43)

Several cases from the literature, however, indicate a more complex picture of intervention and transparency effects for postsyntactic movement. Kramer (2010) points out that in Amharic, the second-position definite marker suffixes at the end of prenominal relative clauses and of modified prenominal adjectives, ‘skipping’ the content internal to these phrases.

- (50) a. [bät’am tillik’-u]_{AP} bet / *[bät’am-u tillik’]_{AP} bet
very big-DEF house / very-DEF big house
‘very big-DEF house’
- b. [Almaz k’onḡo indä-hon-ätʃʃ yä-sämm-a-w] astämari
Almaz pretty C-be-3FS C-hear.PF-3MS-DEF teacher
‘the teacher who heard that Almaz is pretty’ (Kramer, 2010, 198-199)

If this prenominal material is adjoined to *nP* (as in (51)), then as Kramer discusses, Lowering

of D could not be applicable, and thus a more refined version of Local Dislocation from D is needed, in which some linearly intervening material is ignored.



A related problem arises for Bulgarian, which also has a definite suffix that applies to prenominal adjuncts when they are present (see Dost and Gribanova 2006 on problems with the original Lowering analysis in Embick and Noyer 2001). For movement of D onto an adjective, intensifiers do not intervene; however, unlike in Amharic, the definiteness marker applies to the adjective itself and not the entire modifier (i.e. if it has a complement; see Franks 2001).

- (52) a. mnogo interesna-ta kniga / *mnogo-to interesna kniga
 very interesting-DEF book / very-DEF interesting book
 ‘the very interesting book’ (Dost and Gribanova, 2006, 133)
- b. [gorda-ta sās sina si] majka
 [proud-DEF with son her] mother
 ‘the mother proud of her son’ (Harizanov, 2018, 296)

One last transparency effect concerns definiteness suffixation in Icelandic. Ingason (2016a) observes that – unlike the Danish case discussed above – Icelandic adjectives are typically transparent for the purposes of suffixing the definite marker to a noun (53-a). However, prenominal evaluative adjectives block suffixation, resulting in a form of the definite article that precedes the adjective (53-b).

- (53) a. blái bíll-**inn**
 blue car-DEF
 ‘the blue car’
- b. **hinn** ótrúlegi veraldarvefur
 HI.DEF amazing world.wide.web
 ‘the amazing World Wide Web’ (Ingason, 2016a, 136)

Strikingly, Ingason (2016a) shows that there is a linear dimension to the suffixation; evaluative adjectives can appear postnominally (which Ingason takes to be derived through movement of nP), and when they do, the definite marker suffixes to the noun:

- (54) veraldarvefur-inn ótrúlegi / *hinn veraldarvefur ótrúlegi
 world.wide.web-DEF amazing / *_{DEF} world.wide.web amazing
 ‘the amazing world wide web’ (Ingason, 2016a, 143)

The mixture of transparency and intervention effects indicate that a combination of structural and linear information are relevant to postsyntactic movement operations. I propose that these patterns fall out from (55) and (56).²⁸

- (55) **Specified Target Hypothesis:** The target of postsyntactic movement can be specified (e.g. ‘moves to n ’). [for both the conditions on triggers and on operands]
- (56) **Typing Hypothesis for Postsyntactic Movement:** Locality of postsyntactic movement is defined by the operators that relate elements at that point in the derivation (i.e. $*$, \wedge , \oplus).

(55) is wholly unremarkable, but is worth highlighting explicitly. Much of the discussion on blocking effects in Danish and other languages would actually make little sense if the system could not specify the category of the target of movement. Otherwise, we might expect, for instance, that Danish prenominal adjectives would not block definite suffixation, but rather, would themselves bear the definite marker because they are adjacent to D.

Regarding (56), it seems natural that the type of movement at a given stage of the derivation should be tied specifically to the structural and linear information visible at that stage. To illustrate this more clearly, I organize the rest of this section around the order of linearization and concatenation in the postsyntactic derivation.²⁹

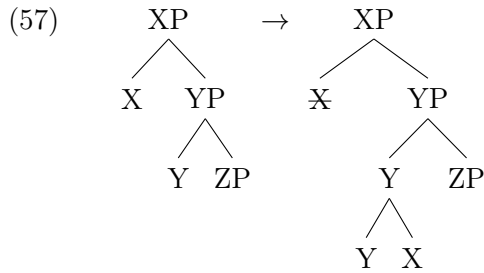
²⁸Throughout the dissertation, I refer to the element to which the moving head is adjoined as the target of movement.

²⁹For all postsyntactic movement operations, I assume that the moved element is always a head. I further assume that none of these operations are available in the narrow syntax.

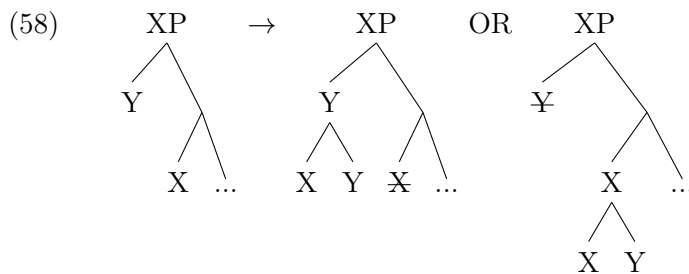
I will also assume that in general, linearization procedures are ordered ‘inside out’ within some domain. I set to the side non-trivial questions about the relation between inside-out ordering and the ordering of

1.4.1 Structure only

First, before any amount of linear order is calculated, *Lowering* is an available type of movement, which moves a head to the head of its complement. This is Embick and Noyer's (2001) analysis of English tense movement, which ignores intervening adjuncts, etc. (see Bobaljik 2002 for an alternative formulation).



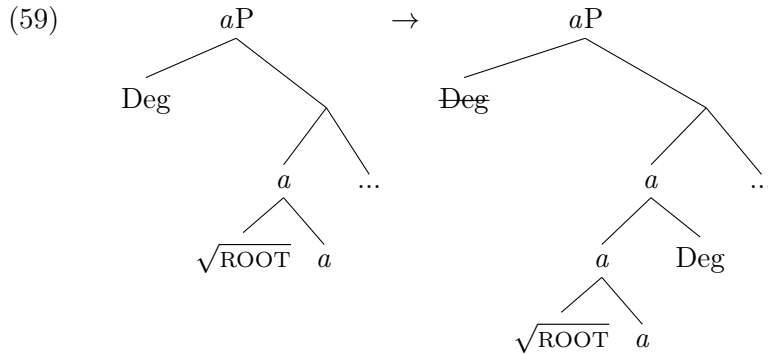
Another structurally defined postsyntactic movement involves a specifier and a head within the same maximal projection (cf. Matushansky 2006). This occurs especially when the specifier is simultaneously maximal and minimal (in the Bare Phrase Structure sense); adjunction of one head to another is thus allowed. With respect to the direction of adjunction, I will assume both exist.



The first option is explored by Matushansky (2006); one example is English pronominal possessors (*my*, *their*, etc.), which realize the possessor D and the head noun D together. This issue is explored more in Section 4.3. I am unaware of any extensive discussion of the second option, but I will assume this occurs in the derivation of synthetic forms of adjectives. Taking the view that DegP is a specifier of *a*P (see Morzycki 2016 and references

successive stages of linearization.

therein), I assume Deg merges as a specifier which is simultaneously maximal and minimal; it subsequently raises and the degree complement is late-adjoined, per the analysis by Bhatt and Pancheva (2004). Crucially, the Deg head is in the specifier position of *a*, and is able to adjoin to *a* in its base position. (Note that this is similar to but not identical to the head-movement analysis of synthetic comparative forms from e.g. Matushansky 2013.)



With respect to synthetic degree expressions, this is a departure from Embick and Noyer (2001), in which it is argued that linear intervention affects the synthetic/analytic alternation with English comparatives and superlatives, which is also explored in greater depth by Embick (2007a)). One of the central claims in these works is that the movement operation that produces the synthetic form is blocked in several environments, very notably in cases where an adverb linearly intervenes:

- (60) a. Mary is the most [amazingly smart] person.
 b. *Mary is the amazingly smart-est person.

Some interesting problems with this account are discussed by Matushansky (2013), who suggests that it is not linear intervention at issue in examples like (60). She suggests instead that such *a*Ps cease to be ‘scalar’ in the relevant sense, and points to the effects of postadjectival degree material on blocking, as well. While (61-a) has a reading of the comparative scoping over the PP modifier, (61-b) does not.

- (61) a. Jude is more [smart to an amazing degree] than Joe.

- b. Jude is smarter to an amazing degree than Joe. (Matushansky, 2013, 69)

Another observation, made by Svenonius (2016, 217), is that linearly adjacent adverbs cannot take on degree morphology even when the same adverbs support this morphology in their corresponding adjectival use (e.g. *filthier dog*).

(62) The DuPonts are {more filthy rich/*filthier rich} than the Smiths.

(Svenonius, 2016, 217)

I propose that Deg is specified to adjoin to the head of the projection in which it is contained, with the additional caveat that some types of structure explored by Embick (2007a) and Matushansky (2013) cause the relation between between Deg and *a* to be structurally nonlocal for the purposes of the operation, thus resulting in the analytic form being used.³⁰ I conclude that the conditions on movement of Deg are structural and not linear.³¹

1.4.2 * Adjacency: Heads and phrases

The first stage of linearization, as described in Section 1.1.3, calculates adjacency statements between different syntactic elements, including heads and complements, but also between adjuncts and the phrases to which they are adjoined. Structural information is still available at this stage.

I propose that, at this stage, movement of a head can target a phrase ‘one bracket in’. In other words, a head can move to the (same-side) edgemoat phrase in its complement. For example, a head that is linearized to the left of its complement can adjoin to a phrase that is leftmoat within the complement. Observe that locality with respect to the * operator

³⁰It also appears to be possible to move the Deg head when it occurs in a larger constituent, such as *exactly three times t long-er*. To accommodate these facts, we would have to say that the head must be able to move out of a more complex specifier.

³¹The locus of Deg with respect to *a* remains the topic of much debate in the literature, not just among researchers interested in degree morphology, but also degree semantics. Note that the head movement analysis of synthetic comparatives and superlatives (e.g. Matushansky 2013) could not be correct under the still-popular approach in which DegP is a specifier of *a*P. For a recent overview of the debate, see Morzycki 2016.

is straightforward; there is only one * between the head and the leftmost element in the complement.

$$(63) \quad X * [ZP * YP]_{YP} \text{ (X can target ZP)}$$

The case where this should apply is the Amharic case discussed by Kramer (2010). A linearly defined operation moves D to the end of an entire phrase. Both *aP* and *CP* are phrasal adjuncts that can appear preminally; they are thus possible targets for adjunction a displacement operation like (63).³² The simplified derivation in (64-b) shows the displacement of D onto the edge of *aP* for the (a) example in (50), repeated in (64-a).

$$(64) \quad \begin{array}{l} \text{a. } [\text{bät'am tillik'-u}]_{AP} \text{ bet} \quad / \quad *[\text{bät'am-u tillik'}]_{AP} \text{ bet} \\ \text{very big-DEF house} \quad / \quad \text{very-DEF big house} \\ \text{'very big-DEF house'}$$

$$\text{b. } [-u * [\text{bät'am * tillik'}] * \text{bet}] \rightarrow [\text{bät'am * tillik'} -u * \text{bet}]$$

(Kramer, 2010, 213-214)

More concretely, I assume that * operations adjoin and relinearize heads with respect to the phrase they adjoin to. These heads may need to undergo further operations to adjoin to neighboring elements.³³

$$(65) \quad X * [ZP * YP]_{YP} \rightarrow [[ZP * X]_{ZP} * YP]_{YP}$$

When there is no adjunct, the definite marker affixes to the noun (66), as expected if it is the leftmost element in the complement of D.

$$(66) \quad \begin{array}{l} \text{bet-u} \\ \text{house-DEF} \\ \text{'the house'}$$

(Kramer, 2010, 197)

³²Recall from 1.1.1 that the complement of D is actually NumP, not *nP*. I assume Num generally lowers to *n*; at the point of calculating * statements, the absence of the head Num in its base position renders it irrelevant for * adjacency. Consequently, a left-headed D will treat the leftmost element in *nP* as being adjacent.

³³See Kramer (2010) on definiteness agreement on other adjectives in Amharic.

This proposal is related to Kramer’s proposal that the adjunction is at the level of the *phase* (in Chomsky’s 2000; 2001 sense), which restricts the targets of postsyntactic movement. Kramer’s idea is that syntactic phases are opaque morphological objects, in that an element outside of the phase cannot target an object internal to the phase (for e.g. movement). While a phasal account might be appealing for independent reasons, I adopt the *phrasal* view, since it fits naturally into the ontology of elements that are linearized with respect to each other (heads and phrases).

This does not exhaust the possibilities at this stage of the derivation. In particular, I propose that, while the ‘target’ of movement is the leftmost phrase in the complement – it is possible to adjoin to the *head* of that phrase. This accounts for the Bulgarian facts discussed above: adverbs do not intervene for definiteness inflection but, unlike Amharic, the definiteness marking goes on the head adjective and not at the edge of the phrase:

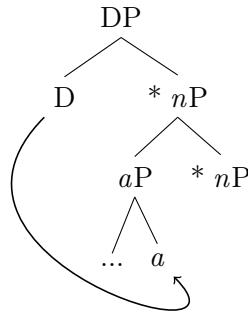
- (67) a. mnogo interesna-ta kniga / *mnogo-to interesna kniga
 very interesting-DEF book / very-DEF interesting book
 ‘the very interesting book’ (Dost and Gribanova, 2006, 133)
- b. [gorda-ta sās sina si] majka
 [proud-DEF with son her] mother
 ‘the mother proud of her son’ (Harizanov, 2018, 296)

This type of adverbial transparency is not immediately captured under Kramer’s (2010) more restrictive system, but it is compatible with the idea that the phrase’s head is a possible target of a postsyntactic movement.³⁴

³⁴The addition of ‘closest *a*’ to the rule should capture the distribution of the definite suffix in coordinate structures, which only targets the leftmost adjective. The rule is also general, deriving the suffixation of the noun in the absence of an adjective.

- (i) a. [nova-ta i interesna] kniga
 new-DEF and interesting book
 ‘the new and interesting book’

- (68) a. Bulgarian D suffixation (provisional): Displace D onto X for D * [XP ...].
 b.



As with Amharic, if the *nP* is the leftmost element in the complement of D, then the definite suffix will apply to *n*.

- (69) kniga-ta
 book-DEF
 ‘the book’

(Harizanov, 2018, 296)

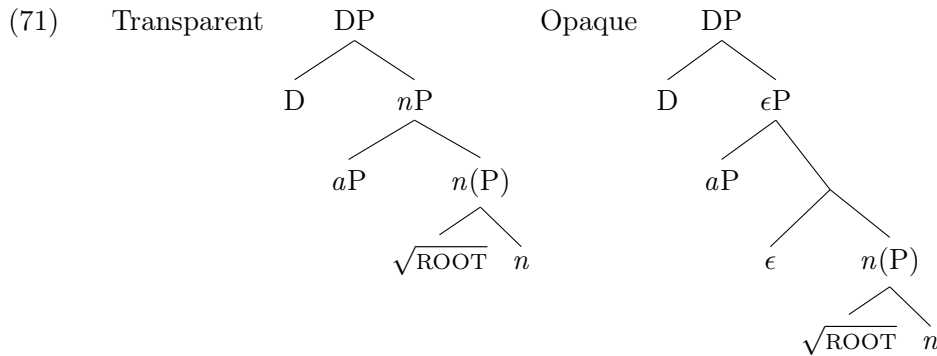
While Amharic and Bulgarian make reference to linear information, the choice of target is different between the two of them: the phrase in the case of Amharic but the head in the case of Bulgarian.³⁵ See Chapter 2 for greater depth of discussion for the definite marker in Bulgarian (where complexities arise with respect to inflectionlessness).

The transparency for Icelandic definiteness suffixation is somewhat different, but also applies at this point in the derivation. Ingason’s analysis can be summarized as follows: suffixation occurs when D is local to *n*, and the additional structure needed to host prenominal evaluative adjectives (as specifiers in this additional structure) is such that it renders the relation between D and *n* nonlocal. As a consequence, while the definite marker ‘skips’ most adjectives, it cannot skip intervening evaluative adjectives.

³⁵Amharic is also a head-final language, giving the appearance that it could be the head rather than the whole phrase that is the target of definite suffixation. However, see Kramer’s (2010) discussion of complex numerals.

- (70) a. blái bíll-**inn**
 blue car-DEF
 ‘the blue car’
- b. **hinn** ótrúlegi veraldarvefur
 HI.DEF amazing world.wide.web
 ‘the amazing World Wide Web’

The transparency effect of non-evaluative adjuncts makes it look as though a Lowering analysis would suffice: if n is the sister of D ,³⁶ then Lowering is triggered. aP adjuncts would not intervene in this case. However, when an evaluative adjective is present, then there is an additional projection ϵP hosting the modifier in its specifier, and as a consequence, the would-be necessary complementation relation between D and n does not hold, and D remains in its position unmoved. The basic pattern is summarized in the trees in (71).

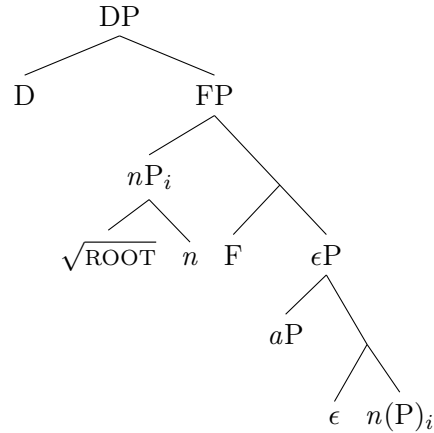


The complication has already been mentioned; namely, that the nP can move to a higher position, in which case, it does end up being definite-suffixed. This would not be expected under a Lowering analysis because n would not be the complement of D . The tree in (73) represents this transparent structural configuration.

- (72) veraldarvefur-inn ótrúlegi / *hinn veraldarvefur ótrúlegi
 world.wide.web-DEF amazing / *DEF world.wide.web amazing
 ‘the amazing world wide web’

³⁶It would not be difficult to accommodate NumP in this type of analysis as far as I can tell. For expository purposes, I exclude it.

(73) Transparent



The Icelandic data follow from the Specified Target Hypothesis in (55), and the nature of the * relation between D and the material in its complement. In particular, D suffixation is specified to target the head of *nP*, and it does so when *nP* is the leftmost element in its complement. It never targets adjectives, even when they are linearly adjacent, and when evaluative adjectives intervene, the system does not crash; rather, D remains *in situ* and the non-suffixal definite article emerges.

The necessary * adjacency relation holds in two circumstances: i) when *nP* is the complement of D and ii) when *nP* is the leftmost element in the complement of D. This is illustrated in (75). Notice that *aP* adjuncts to *nP* will not intervene, because they do not disrupt the adjacency relation between D and *nP*. This correctly derives the transparency of (non-evaluative) prenominal *aPs*.

(74) blái bíll-**inn**
 blue car-DEF
 ‘the blue car’

(75) a. D * [*aP* * *nP*]**nP**
 b. D * [*nP* * F ...]_{FP}

This formulation also correctly predicts that postnominal material does not intervene for the purposes of definite suffixation. If PPs are adjoined to *nP*, then the adjacent phrase will still be *nP*, and the operation will still target the head of *nP*.

- (76) a. maður-inn með hatt-inn
 man-DEF with hat-DEF
 ‘the man with the hat’
- b. D * [nP * PP] nP

Postsyntactic movement at this point in the derivation thus gives rise to some putative transparency effects, while still being constrained by linear relations between an element that moves and the element that is moved to.

1.4.3 MWd concatenation

The system here is designed to remain restrictive but still accommodate certain types of transparency. Given the relation between the derivational stage and the type of movement, the current system can still capture the basic intervention facts from e.g. Embick and Noyer (2001). Returning to the Danish example, recall that – unlike Icelandic – all prenominal adjectives intervene for the purposes of definite suffixation, causing the definite article to appear.

- (77) *gamle hest-en / *den gamle hest-en / ✓den gamle hest
 old horse-DEF / DEF old horse-DEF / DEF old horse
 ‘the old horse’

Simply stated, the ‘transparent’ cases discussed above involve * adjacency, while Danish suffixation involves MWd concatenation. Danish, like Icelandic, targets a specific nominal element (the MWd n in this case), but the movement occurs at a different stage in the derivation. This is a matter of how postsyntactic operations are specified.³⁷

One of the other cases discussed by Embick and Noyer (2001) is the Latin conjunction element *-que* ‘and’ (on which, see also Embick 2007a), which targets the first MWd of a second conjunct.

³⁷One complication in Danish comes from restrictive relative clauses, which are postnominal yet require the definite article, blocking definite suffixation to the noun (Hankamer and Mikkelsen, 2005).

- (78) sine scutis sine-que ferro
 without shields without-and sword
 ‘without shields and without sword’ (adapted from Embick 2007b, 312)

Embick and Noyer (2001) treat this as Local Dislocation of the conjoining element to the first MWd. Their prediction, not explored by Embick and Noyer (2001); Embick (2007a), is that the functional category of the first MWd in the second conjunct is irrelevant to the process; for example, if two adjectives are coordinated, and the second one is modified by a preadjectival intensifier, then the intensifier should receive the *-que* suffix, not the adjective. This is borne out:³⁸

- (79) ...eae vero, quae gignunt, [inbecillos vix-**que** vitales]
 those.NOM.F.PL indeed who give.birth, weak.ACC.M.PL hardly-and alive.ACC.M.PL
 edunt.
 produce.3.PL
 ‘...those (women) who do give birth, produce weak and hardly living ones.’
 (Celsus, De Medicina 2.1.14)

In the current framework, the process is indeed linear and it targets the MWd with which it is concatenated (to its right). The Latin *-que* examples will also become relevant in the discussion of inflectionless elements in Section 2.3.1.

1.4.4 SWd concatenation

Movement under SWd concatenation involves ‘metathesis’ of adjacent morphemes. The original example from Embick and Noyer (2001, 578-580) comes from the distribution within the verbal complex of the Lithuanian reflexive marker *-si*; see also Arregi and Nevins (2012, 252-255). In brief, *-si* often appears at the end of a verbal complex (80-a), but in the presence of certain ‘preverb’ elements, appears after the first preverbal element (80-a)-(80-c).

- (80) a. jì sākè-**si**
 she say-PST.3.SG-REFL
 ‘she said herself to be’

³⁸I am grateful to Dave Embick and Rolf Noyer for helping me identify and translate a relevant example.

b. jì at-**si**-sāk-è
she PV-REFL-say-PST.3.SG
'she refused'

c. pri-**si**-pa-žîn-ti
PV-REFL-PV-know-NF
'to acknowledge'

(Nevis and Joseph, 1993, 95-96)

The distribution of the reflexive has been suggested by Embick and Noyer (2001) and Arregi and Nevins (2012) to be determined by linear displacement operations within the MWd, and is likened to a second position effect; see these references for details, and the latter for more examples of 'metathesis' that can be analyzed along similar lines.

1.4.5 Movement summary

This section synthesizes various case studies from the literature to represent a coherent view of postsyntactic movement that captures various patterns of transparency and intervention effects. While the works cited here are more thorough in their discussion of each phenomenon, this section shows how a unified theory that makes reference to particular targets and under what type of locality they operate can account for cross-linguistic patterns. Locality for each operation is defined in terms of the derivational stage and which elements are related at these stages. Below is a table summarizing the cases discussed in this section.

Stage	Language	Moves	Target	Opacity/Transparency
Pre-Linearization	English	T	complement	skips adjuncts
Pre-Linearization	English	D[POSS]	spec	(discussed in Section 4.3)
Pre-Linearization	English	Deg[CMPR] (spec)	head	blocked by pre- or post-adjective degree adjuncts
* Adjacency	Amharic	D	XP	end of modifier
* Adjacency	Bulgarian	D	Head of XP	skips adverbs
* Adjacency	Icelandic	D	Head of <i>nP</i>	skips adjoined <i>aPs</i>
MWd \frown	Danish	D	<i>n</i>	Blocked by intervening <i>a</i>
MWd \frown	Latin	Conj	X	Not sensitive to category
SWd \oplus	Lithuanian	REFL	X	second-position

I adopt this view of postsyntactic movement in the rest of the dissertation. Most crucially, linear conditions can be stated not just over immediately adjacent MWds in the narrowest sense. I contend that this approach is warranted by the transparency effects from the cases synthesized here. It is not my objective in the rest of the dissertation to explore all of the locality effects of postsyntactic movement, but this section defines a framework for talking about postsyntactic movement in terms of targets and conditions.³⁹ The following table summarizes the basic list of possible postsyntactic movements (note that ‘head’ refers to a potentially complex head).

³⁹Various questions arise regarding, for example, sensitivity to the vocabulary (one of the chief interests of Embick and Noyer 2001), which I set to the side.

Movement	Description	Notes
Lowering	A head adjoins to the head of its complement.	This operation skips intervening adjuncts and specifiers.
Spec-Head	A head adjoins to the phrase/head of its specifier; or a head of a specifier adjoins to the head of the phrase to which it is a specifier.	It may be blocked by structurally intervening phrasal material.
Movement under Adjacency *	A head adjoins to a phrase/head when the moving head is separated by one * from the phrase.	If phrase, this operation can skip the entire phrase to adjoin to the end; if head, the phrase skips intervening phrasal material between the two heads. Movement is blocked by linearly intervening phrases.
Movement under MWd/SWd Concatenation (Local Dislocation)	A head adjoins to a head with which it is concatenated.	MWd concatenation can skip internal elements of complex heads. Movement is blocked by intervening heads of the same type.

In summary of this section, postsyntactic operations apply locally – however, different types of locality are relevant depending on the stage of the derivation. The refinements to how linearization occurs in the postsyntax helps capture patterns of putative transparency in a restrictive way that still captures patterns of blocking.

1.5 Introductory Conclusion

The DM model presented here has a few key points of departure from previous work: i) rules distinguish between the triggering and the execution of a rule; ii) node-sprouting can target various types of elements, including MWds, and iii) the locality of postsyntactic movement varies depending on how elements relate to each other via adjacency, concatenation, etc. The rest of this dissertation examines phenomena from various languages that bear on the viability of this model.

In Chapter 2, I focus on the syntactic distribution of exceptionally inflectionless elements in various languages, including BCS, Bulgarian, Icelandic, Latin, and Russian, offering novel data and explicit analyses for the phenomena in each language, with special attention paid to Bulgarian. I first establish the predictions of a modular architecture in which exceptional inflectionlessness is (often) treated as a morphological fact, and show how this general principle holds for phenomena which are less controversially morphophonological, such as lexical gaps. I then offer several theoretical options for analyzing inflectionlessness in DM, and discuss what types of postsyntactic interactions that we expect to occur given the model presented here. The case studies illustrate the effect of inflectionlessness on postsyntactic movement, the expression of case, and other phenomena. I argue that in some cases, exceptionally inflectionless forms cause derivational trapping situations that lead to a crash, and I defend the claim that inflectionlessness that is encoded morphologically cannot interfere with processes in narrow syntax. For case studies involving movement, I establish locality properties of postsyntactic movement and show how this interacts with exceptional inflectionlessness. For at least one case – the movement of the Bulgarian definite marker – the theory of locality of postsyntactic movement may require some revision, based on the data from exceptional inflectionlessness.

Chapter 3 offers a more in-depth case study of German adjectival inflection. I provide evidence from the linear sensitivity of inflection that node-sprouting is indeed postsyntactic, and show how node-sprouting at a phrasal level captures the distribution of inflectional mor-

phemes on attributive elements. I then examine the exceptionality of inflectionless elements, which, as I demonstrate, also displays linear sensitivity. Lastly, I delve into the well-known but understudied interaction between inflectionlessness and noun phrase ellipsis (NPE) in German, for which I advance a novel account based on the idea of derivational trapping. The account here attributes (for some speakers) the ungrammaticality of exceptionally inflectionless elements in NPE to the stranded adjectives themselves, which ‘expect’ to be parasitic on neighboring nouns, but cannot be when the nouns are elided.

Chapter 4 looks at derivational trapping for phenomena beyond agreement morphology; that is, I argue that certain patterns of ungrammaticality in other domains are argued to arise from the inability to execute postsyntactic operations that have been triggered. There are three unrelated phenomena described in this chapter. The first is lexical gaps, which are argued to arise from disruptions to morphophonological rules. I specifically investigate the *stride* gap in English, and show how an explicit analysis of the feature representation of participles and preterites in conjunction with the structure of morphophonological rules provides a restrictive theory of gaps in this domain. The second phenomenon is the interaction between postsyntactic movement and coordination. I discuss data from preposition-determiner contraction in Brazilian Portuguese, French, Italian, and Spanish. I argue for a particular formulation of the across-the-board constraint that relies on the distinction between the triggering and the execution of operations. In particular, I suggest that ATB violations obtain when an operation is *triggered* by one conjunct but not the other. I then show how this can capture apparent ATB violations that turn out to lead to well-formed outputs, precisely in cases where a rule is triggered but an optional sub-rule specifies null change. The third phenomenon is the formation of pronominal possessors in English (producing e.g. *their*), where the triggering of the postsyntactic rule that adjoins D to the possessor can ‘over-apply’ – the result in ‘over-applying’ circumstances is a derivational trapping situation for certain complex possessors such as **one of them’s books*.

Chapter 5 offers concluding remarks.

Chapter 2

Exceptional Inflectionlessness

This chapter focuses on the morphosyntactic representation of exceptionally inflectionless elements and how they affect grammatical processes. It is argued that exceptional inflectionlessness (the exceptional absence of agreement morphology) is fundamentally a morphological fact which is encoded by processes in the postsyntax. As a consequence, the absence of inflection can affect postsyntactic processes, such as certain types of movement, but cannot affect the operations of narrow syntax. Several case studies are presented to assess this argument, from languages including Latin, Icelandic, Bulgarian, BCS, Russian, and Italian. I offer concrete proposals of each of these interactions (or lack of interaction), some of which involve derivational trapping, where a postsyntactic operation can be triggered but not executed (on which, see Section 1.2).

Realizational theories like Distributed Morphology (DM) are restrictive in that they predict only a narrow range of interactions to be possible between morphological and syntactic operations. More specifically, certain types of morphological (and phonological) information – such as allomorph choice – are expected to be inaccessible to syntactic operations. There is variation among realizational theories in regards to exactly which pieces of morphological information are present in syntax and which are not, but a strong version of separation is exemplified by *Feature Disjointness* (Embick, 2000), which essentially excludes all morphology-specific information from the narrow syntax:

- (1) “*Feature Disjointness*: Features that are phonological, or purely morphological, or arbitrary properties of vocabulary items, are not present in the syntax; syntactico-semantic features are not inserted in morphology.” (Embick, 2000, 188)

It is not only Distributed Morphologists (or realizational theorists generally) who expect syntax/morphology interactions to be constrained. Zwicky (1990), whose positions are Lexicalist, adopts a *Principle of Morphology-Free Syntax*. While the assumptions underlying these frameworks are different from each other in fundamental ways, it is telling that a similar principle has been maintained by researchers from these divergent points of view (see also Corbett 2009):

- (2) “I adopt...the Principle of Morphology-Free Syntax...according to which, syntactic rules placing conditions on syntactic representations are blind to the internal structures and derivational histories of the words occurring in those representations.” (Zwicky, 1990, 220)

Important to the question of whether these positions are defensible are phenomena which implicate syntax/morphology interactions. Broadly, these theories predict that idiosyncratic morphological information should be inaccessible and irrelevant to narrow syntax. Information like declension class, for example, should play no syntactic role.

In DM, at least some types of interactions are expected to be possible between different morphological operations, with the range of interactions being constrained by the serial order of operations. For example, an impoverishment operation that deletes features in marked environments feeds the realization of less specified Vocabulary Items. Specific theories about the order of operations make predictions with respect to possible and impossible interactions in the postsyntax (e.g. Arregi and Nevins 2012).

A fruitful yet understudied domain that can elucidate the workings of both syntax/ morphology and morphology/morphology interactions is the distribution of agreement affixes. If the sprouting of agreement morphemes is confined to the postsyntactic derivation (see

Section 1.3), then syntactic operations cannot be sensitive to how or whether a syntactic element will come to be inflected in the postsyntax. This follows from modular separation. In contrast, the insertion, non-insertion, or deletion of agreement morphemes may affect other postsyntactic operations (given certain orderings of operations). Stated somewhat more formally:

- (3) a. **Agreement Morpheme Hypothesis (Part I):** Syntax *cannot* make reference to how or whether an element comes to be inflected with agreement morphology.
- b. **Agreement Morpheme Hypothesis (Part II):** Morphological operations *can* make reference to how or whether an element is inflected with agreement morphology (given certain orderings of processes).

While (in)sensitivity to agreement morphology is often taken to pertain to the *allomorphy* of inflectional nodes, my focus in this chapter will be on the role of inflectionlessness, which I will argue involves the absence of agreement morphemes, as opposed to zero realization. In particular, I explore the understudied domain of what I will call *exceptionally inflectionless* (EI) – or *indeclinable* – elements. While typical members of a lexical or functional category may display agreement morphology, exceptionally inflectionless members are listed exceptions that do not. More specifically, EI elements exhibit no formal alternations conditioned by features such as person, gender, number, case, definiteness, etc; in other words, they are formally invariable. EI elements lack an overt affix in a position where other members of the same category would express these features.

An illustration of exceptional inflectionlessness comes from Bulgarian. Adjectives in the language inflect for gender and number (4). In contrast, the exceptional adjective *erban* ‘skillful’ is invariant with respect to gender and number (5).

- (4) a. interesen čovek / interesna žena / interesno dete
 interesting.M.SG person / interesting.F.SG woman / interesting.N.SG child
 ‘an interesting person/woman/child’

- b. interesni khora/ženi/detsa
 interesting.PL people/women/children
 ‘interesting people/women/children’

- (5) erbap {čovek/khora} / erbap {žena/ženi} / erbap {dete/detsa}
 skillful {person/people} / skillful {woman/women} / skillful {child/children}

The exceptionality of *erbap* and other EI elements could in principle be captured in various ways, such as i) an exception to the node-sprouting rule, ii) deletion of the agreement morpheme, or iii) $-\emptyset$ allomorphy. Relevant for current purposes is that the locus of exceptionality is in the postsyntax. This would be consistent with the intuition that this type of exceptionality is fairly superficial; there is nothing grammatically ‘deeper’ about it.

The mere existence of EI elements such as *erbap* does not present any challenges for the hypotheses in (3) when considered by itself. However, questions arise when EI elements fail to share the full morphosyntactic distribution of elements of the same category. In Bulgarian, some speakers cannot form definite expressions at all when EI adjectives are prenominal adjectives (6) (Halpern 1995; Spencer and Luís 2012).

- (6) a. erbap čovek
 skillful person
 ‘a skillful person’
 b. *erbap-at čovek / *erbap čovek-at
 skillful-DEF person / skillful person-DEF
 ‘the skillful person’

If formal invariance is merely a superficial morphological fact, then it is puzzling that an invariant form should be restricted in its distribution. If, for example, invariance is encoded in terms of allomorphy defined at Vocabulary Insertion, then the syntax should be able to construct expressions unimpeded, using elements that will come to be realized as $-\emptyset$ in the postsyntax.

As it turns out, exhibiting defectivity in syntactic distribution is indeed a property of some EI elements, and I discuss several relevant cases in Sections 2.3 and 2.4. Maintaining that syntax/morphology interactions are indeed constrained by modularity, I propose

that the correlations between inflectionlessness and defective or distinct distributions are reducible to the interaction of postsyntactic operations, some of which will lead to derivational trapping situations. In some cases, EI elements may be inferred by speakers to be distinct types of syntactic objects, such as compounding elements or members of a different syntactic category (e.g. preposition rather than adjective). The properties of these possibilities are distinguishable on the basis of distributional diagnostics.

As is described in Chapter 1, I follow previous literature (Halle and Marantz 1993; Embick and Noyer 2001; Kramer 2009; Norris 2014; Choi and Harley 2019) in adopting the view that postsyntactic rules produce agreement morphemes (see Section 1.3). While these have been referred to as *dissociation* rules in the DM literature, I adopt Choi and Harley’s (2019) rechristening of these rules as *node-sprouting*.

According to the current account, the postsyntactically induced absence of agreement morphemes should have one of three derivational consequences: i) it does not interfere with any process; ii) it prevents a postsyntactic process from being triggered, resulting in an alternative derivation (possibly a default); or iii) it still triggers an operation but prevents the operation from being properly executed, causing the derivation to crash.¹ I illustrate in Sections 2.3 and 2.4 that all three of these are attested, providing evidence from many languages, including Bosnian/Croatian/Serbian (BCS), Bulgarian, Latin, Icelandic, Italian, and Russian. Inflectionlessness in German is also investigated in depth in Chapter 3.

The current focus on exceptions does not mean that the theoretical focus is narrow. I concur with Landau (2016a, 976), who, in his study of agreement patterns with a specific Modern Hebrew noun, states that “exceptions are no less and often more revealing as to the underlying grammatical system than regular patterns are”. Studying the patterns of ungrammaticality (and grammaticality) with exceptionally inflectionless elements is meant to be informative about how the general postsyntactic operations are formulated, both in the abstract sense of how rules can be composed, and in the more specific sense of how

¹With respect to (iii), it is worth emphasizing that the implication is that syntactically ‘well-formed’ inputs need not all have morphologically well-formed outputs. This seems like a natural extension of treatments of lexical or paradigmatic gaps, on which, see Section 2.1 and 4.1.

postsyntactic operations such as movement rules are formulated.

One further dimension of the current proposal is that the issues arise from postsyntactic processes – such as those involved in word formation – and not from negative constraints. This is, in my view, the correct type of theory to pursue, given that language-specific negative constraints are suspicious in terms of their learnability. Such negative constraints would be learned from indirect negative evidence (‘I’ve never heard X’), which has been pointed out in the acquisition literature to be highly problematic (Yang 2015, 2016; Irani 2019, and references therein). I take this to mean that it is preferable to pursue a processual theory of defective distributions of EI elements, rather than appealing to language-specific negative constraints.²

The rest of this chapter is structured as follows. In Section 2.1, I illustrate how syntactically well-formed expressions can be ill-formed due to morphological or phonological issues, reaffirming the general approach. Section 2.2 considers theoretical options for deriving exceptional inflectionlessness, laying out predictive differences between theoretical options. Sections 2.3 and 2.4 examine case studies from various languages that illustrate how the absence of agreement morphology can and cannot affect certain processes. Section 2.3 focuses specifically on cases of effects (or lack of effects) of inflectionlessness on postsyntactic processes, which indicate that inflectionlessness can be encoded ‘early’ in the postsyntactic derivation, while Section 2.4 focuses on cases that constitute potential challenges to the modular view, where inflectionlessness appears to have effects on syntactic movement. I offer concrete proposals for each case study to account for the interaction effects, some of which involve derivational trapping analyses in which the absence of inflection interferes with a process, such that it cannot be executed.

²To be clear, the use of ‘well-formedness’ in this dissertation does not refer to negative conditions on the properties of the output. Rather, it generally refers to the (positive) conditions on the input for a particular operation. Thus the obligatoriness of adjectival inflection is encoded in terms of a node-sprouting rule that states that adjectives sprout nodes, not a negative constraint that bans adjectives without sprouted nodes.

2.1 On the Grammatical Loci of Defectivity

The hypothesis explored in this chapter is that exceptional inflectionlessness is fundamentally a morphological fact, and thus, that all cases of alternation or ungrammaticality linked to inflectionlessness stem from postsyntactic interactions, which in some cases lead to derivational trapping. In this section, I illustrate from the phenomenon of paradigmatic gaps that it is possible to have well-formed syntactic expressions that have no morphophonological output, yielding ungrammaticality.

That there should be distributional gaps due to disruptions in the postsyntax is in some sense not surprising. Most lexical or paradigmatic gaps discussed in the literature have been proposed to be due to phonological or morphological issues. For example, some speakers of Norwegian cannot form imperatives from some roots (Rice, 2003, 2005). The reason is phonological in character: the unpronounceable imperatives would end in infelicitous consonant clusters. For many speakers, these imperatives cannot be repaired via epenthesis or any other strategy.

- (7) a. å spise – spis! ‘(to) eat’
å snakke – snakk! ‘(to) talk’
å løfte – løft! ‘(to) lift’
- b. å åpne – *åpn! ‘(to) open’
å padle – *pad! ‘(to) paddle’
å sykle – *sykl! ‘(to) bike’

(Rice, 2005, 2)

This gap has no effect on the syntactic well-formedness of these roots in the context of the imperative. That this is so is confirmed by the option of putting these imperatives in an environment in which the following word is vowel-initial, which makes the imperative felicitous, as the consonants can be syllabified in the onset of the following syllable (8).³

³While Rice pursues an Optimality Theoretic analysis of such gaps, a rule-based alternative would be simple enough to implement, involving the inability of an epenthesis rule to apply, causing subsequent issues with syllabification. As Rice (2005) discusses, there is a complication in that epenthesis seems to apply to the nominal version (e.g. *sykkel* ‘cycle’), indicating a morphophonological dimension to the gap.

- (8) a. Sykl opp bakken
bike.IMP up hill.the
‘Bike up the hill!’
- b. *Sykl nedd bakken
bike down hill.the
‘Bike down the hill!’

(Rice, 2005, 3)

It can also be made clear that morphological gaps have no syntactic status. There exist in natural language lexical or paradigmatic gaps (see Halle 1973; Baerman et al. 2010; Arregi and Nevins 2014; Yang 2016), where a root lacks the ability to appear in certain grammatical forms, with conceivable, expected forms being judged as ungrammatical, as in the case of the English past participle for *stride*. For English speakers who use the preterite *strode*, the past participle of the verb has no well-formed version, as speakers reject *stridden*, *strode*, and *strided* as participles (Yang 2016). While it may seem intuitive that this is fundamentally a matter of morphological realization rather than syntax, we can actually demonstrate that the syntax of the participle of *stride* is well-formed, confirming that the derivational locus of the problem leading to the gap is morpho(phono)logical.⁴ (See Section 4.1 for an analysis of the *stride* gap in terms of derivational trapping.)

I now show three pieces of evidence suggesting the syntax that should be realized with a participle of *stride* is well-formed. First, it is commonly held that ellipsis sites contain complex syntactic structure isomorphic to that of its antecedent (see discussion in Saab 2019 and references therein). If the structure of the participle of *stride* were illicit in the syntax, we would predict ellipsis of the participial material to be ungrammatical. This is not borne out for either the perfect use of the participle or the pseudo-passive use.⁵

- (9) a. Jane walked/strode into the room even though she shouldn’t have.

⁴Observe that the ill-formedness of the participle cross-cuts its realization as either the perfect (i) or the pseudo-passive (ii).

- (i) a. Mary walked/strode into the room.
b. Mary has walked/{*strided/*strode/*stridden} into the room.
- (ii) a. Mary walked/strode across the bridge.
b. Mary designed the bridge [to be walked/{*strided/*strode/*stridden} across].

⁵The (10) example is modeled after the active/passive mismatch from Merchant 2019, 42.

- b. Jane shouldn't have walked/{*strided/*strode/*stridden} into the room.
- (10) a. People walk/stride into a room whenever it is apparent that it needs to be.
 b. Every room needs to be /{*strided/*strode/*stridden} into.

The second piece of evidence comes from *vP* preposing contexts of the type seen in (11) (see Oku 1998; Breul 2014; Thoms and Walkden 2018, among others). What is striking about these constructions is that the preposed phrase makes use of a bare form of the verb (11-a), even though it would be pronounced with a participle if not preposed (11-b).

- (11) a. We thought she would lose her temper, and [_{*vP*}lose her temper], she has.
 b. She has {*lose/lost} her temper.

(Thoms and Walkden 2018, 174, citing Emonds 1976)

I follow Breul (2014) and Thoms and Walkden (2018) in taking participial structure to be built in the unpronounced lower part of the clause in this construction.⁶ Under the view that the *stride* gap is syntactically ill-formed, the *stride* participle would be predicted to be ungrammatical in this construction. This is not borne out (12).

- (12) a. We thought she would stride into the room, and stride into the room, she has.
 b. *She has strided/strode/stridden into the room.

Third, in the retroactive gerund or 'concealed passive' (Clark 1990; Safir 1991; Huddleston and Pullum 2002, among others), a matrix verb such as *need* or *require* takes a nonfinite complement, and the matrix subject argument is either raised from the embedded object position or controls an argument that is raised from this position. The construction is unusual in that it has passive properties (such as being able to take a *by*-phrase) even though the lower verb takes present-participial *-ing* rather than the expected passive participial morphology (13-b). If this construction uses (some of) the same syntacticosemantic structure

⁶The analyses in Breul 2014 and Thoms and Walkden 2018 show considerable differences, but share this in common.

as a canonical passive, then we would predict *stride* to be ungrammatical in this construction if it were syntactically ill-formed in the passive. While such examples are awkwardly contrived, it is clear from (14) that this prediction is not borne out.

- (13) a. This shirt needs washing.
b. This student needs looking after by a caring parent. (Safir, 1991, 105)
- (14) a. (Every room needs to have someone stride into it by the end of the day:)
This room still needs striding into.
b. *This room still needs to be strided/strode/stridden into.

The syntactic evidence thus lends support to the fact that the *stride* gap is morphological, and that its morphological defectivity has no effect on the well-formedness of the corresponding syntactic object.

In summary of this subsection, ungrammaticality can arise when an expression is syntactically well-formed but fails to be morphophonologically processed; the ill-formedness of the morphology or phonology has no effect on the syntax. This reinforces the basic modular separation between the narrow syntax and the postsyntax. With this in mind, in the next sections, I turn to issues of inflectionlessness, under the same hypothesis that EI elements have no effect on syntax.

2.2 Deriving Exceptional Inflectionlessness

In this section, I sharpen the theoretical notion of inflectionlessness by offering a comparison of a few possibilities for deriving it. This provides the theoretical tools required for the analyses in Sections 2.3 and 2.4, which present several case studies of inflectionlessness.

To my knowledge, there is little DM research that addresses issues with exceptionally inflectionless elements. But in principle, there are a few different mechanical ways of deriving inflectionlessness within a DM framework. I illustrate several options, namely: allomorphy at the level of Vocabulary Insertion (Section 2.2.1), impoverishment (Section 2.2.2), radical

impoverishment (also called *obliteration*) (Section 2.2.3), rule exceptionality (Section 2.2.4), and morphophonological deletion (Section 2.2.5). I then discuss two alternative options: i) to say that EI elements actually belong to a different lexical or functional category (e.g. they are prepositions rather than adjectives) (Section 2.2.6) and ii) to say that the EI element forms a compound with another element, thereby failing to trigger a node-sprouting rule that would apply to the EI element (Section 2.2.7).⁷ Section 2.2.8 provides a summary of these options.

I assume that the locality of operations is generally constrained by adjacency as it is defined at a given stage (cf. Embick and Noyer 2001; Embick 2007a, 2010; Marantz 2013, etc.). The way adjacency is defined will depend on what types of operators relate elements at that point in the derivation (sisterhood, *, \frown , etc.); see Section 1.4.

While these ways of deriving inflectionlessness are all theoretical options to entertain, I do not claim that they are all invoked. Not all make clearly distinct predictions, though some do; I discuss relevant dissociations below.

2.2.1 Allomorphy

One way to capture exceptional inflectionlessness is in terms of a \emptyset allomorph of an inflectional morpheme, conditioned by its local context. If, for example, we accept the claim from Arregi and Nevins (2013) that contextual specificity takes precedence over feature specification at the level of Vocabulary Insertion (pace Halle 1997), we can capture inflectionlessness by saying that the agreement morpheme will receive $-\emptyset$ exponence when it is local to certain roots (or other morphemes). This is illustrated in (15).

⁷There may be a number of other analytic options, as well, all of which raise questions about what are licit grammatical operations and what are licit ways to encode exceptionality. What is most relevant for purposes of the theory is whether these options treat inflectionlessness as a grammatically *superficial* property: just as node-sprouting is postsyntactic, so too should be the listing of any exceptions.

- (15) INFL $\leftrightarrow -\emptyset / \{\sqrt{\text{ROOT1}}, \sqrt{\text{ROOT2}} \dots\}$
 INFL[α][β] $\leftrightarrow -A$
 INFL[α] $\leftrightarrow -B$
 INFL $\leftrightarrow -C$

(Contextual Conditions > Feature Specification)

Given this setup, $\sqrt{\text{ROOT1}}$ and $\sqrt{\text{ROOT2}}$ will be devoid of agreement morphology across feature combinations. At Vocabulary Insertion, an INFL next to $\sqrt{\text{ROOT1}}$ will be realized as null, even if bears the features [α] and [β]. While the conditions on insertion would be met for A, $-\emptyset$ is inserted instead – despite not having any features in its specification for insertion – because local context takes precedence. Note that, in the absence of other postsyntactic operations that affect the content of the morpheme, the assumption from Arregi and Nevins that context takes precedence is necessary for the neutralization across contexts. If we were to reverse the precedence of morphosyntactic feature specification and context, as in the more conventional approach, then the correct allomorphy would not be derived; that is, elements in the context of $\sqrt{\text{ROOT1}}$ or $\sqrt{\text{ROOT2}}$ would not be invariant. For the example in (15), if the input to Vocabulary Insertion were INFL[α][β] next to $\sqrt{\text{ROOT1}}$, $-A$ would win over $-\emptyset$.

It is not clear how this option would derive cases of syntactic defectivity, given how late in the derivation $-\emptyset$ allomorphy is determined; other processes should be oblivious to the status of lexically conditioned allomorphy, irrespective of whether it is null or not. Moreover, the assumption about context precedence for Vocabulary Insertion is relatively underexplored.

2.2.2 Impoverishment

A related possibility would be to derive inflectionlessness through impoverishment (Bonet 1991; Noyer 1997; among many others). It could be stated that all features on an INFL node are deleted in the context of certain roots. This impoverishment operation would be coupled with an Elsewhere item \emptyset inserted at INFL, as in (16).

- (16) a. Impoverishment: $[\alpha],[\beta]$, etc. $\rightarrow \emptyset / \{\sqrt{\text{ROOT1}},\sqrt{\text{ROOT2}}\dots\}$
 b. Vocabulary Insertion: $\text{INFL}[\alpha][\beta] \leftrightarrow -A$
 $\text{INFL}[\alpha] \leftrightarrow -B$
 $\text{INFL} \leftrightarrow -\emptyset$

The deletion of features – triggered by certain roots – bleeds the insertion of a more specific Vocabulary Item, and a less specified exponent is chosen.

An analysis invoking impoverishment predicts that an agreement morpheme has a default exponent realized as \emptyset in other morphosyntactic environments, not just in the exceptional cases.

2.2.3 Radical impoverishment

A second type of impoverishment could delete the entire node; this is sometimes called *radical impoverishment* (Embick, 2015) or *obliteration* (Arregi and Nevins, 2007). (See also Embick 2010 on the related notion of *pruning*.)

- (17) $\text{INFL} \rightarrow \emptyset / \{\sqrt{\text{ROOT1}},\sqrt{\text{ROOT2}}\dots\}$

One potentially dissatisfying aspect of this option is that, unlike most impoverishment operations in DM, this deletion would not be driven by markedness (e.g. Nevins 2011), being driven instead by lexical exceptionality. Unlike allomorphy but like impoverishment, radical impoverishment should be able to have an effect on subsequent operations that precede Vocabulary Insertion.

2.2.4 Exception to a rule: Exceptional null change

Another possibility is to build exceptional inflectionlessness into the node-sprouting rule as a listed exception. This would require a particular type of formulation, as the exception would amount to the *non-application* of a rule.

There are at least two ways of representing exceptional listedness; I will choose the second. The first option could be to formulate the rule as in (18), extending the idea from

Embick and Shwayder (2018) that certain types of rules can be exceptionally ‘switched off’, motivated by their analysis of German umlaut. While Embick and Shwayder discuss exceptional switching in the context of morphophonological rules, it is simple enough to see how this should extend to other types of postsyntactic operations.

- (18) $[R(\text{NODE-SPROUT}) \text{ is default ON.}]$
 $R(\text{NODE-SPROUT}) \text{ turns OFF / } \{[\sqrt{\text{ROOT1}} a^0], [\sqrt{\text{ROOT2}} a^0] \dots\}$
 For an MWd a^0 , Perform $R(\text{NODE-SPROUT})$
 $R(\text{NODE-SPROUT}): a^0 \rightarrow [a^0 \text{ aInfl}^0]$

(18) says that a rule is typically active in the language, but is deactivated for specific roots. The rest of (18) specifies how the rule is triggered and executed when it is active; if a root has caused the rule to be deactivated, it will not apply, regardless of whether its conditions are otherwise met.

The second, related option fits more clearly into the current framework: *exceptional null change*. For null change, a rule’s conditions on triggers are indeed met, but a sub-rule triggered by certain roots specifies that no change occurs. The equivalent of (18) is (19) (see Section 4.2 for a case where this formulation is crucial).

- (19) For an MWd a^0 , Perform $R(\text{NODE-SPROUT})$
 $R(\text{NODE-SPROUT}): \text{ If } a / \{\sqrt{\text{ROOT1}}, \sqrt{\text{ROOT2}} \dots\}, \text{ no change.}$
 Else: $a^0 \rightarrow [a^0 \text{ aInfl}^0]$

2.2.5 Morphophonological deletion

The final operation I will mention deletes whatever exponent would be inserted at Vocabulary Insertion by morphophonological rule, as in (20). This type of solution may seem appealing for some cases, in that it is linked to the idea that phonological well-formedness may motivate the deletion, as in the case of some loanwords.

- (20) a. INFL[α][β] \leftrightarrow -A
 INFL[α] \leftrightarrow -B
 INFL \leftrightarrow -C
 b. -A/-B/-C \rightarrow \emptyset / $\{\sqrt{\text{ROOT1}}, \sqrt{\text{ROOT2}} \dots\}$

An unattractive part of this formulation is that it is defined over a disjunctive list of exponents, and does not reflect the fact that it is in fact all feature combinations and ‘expected’ exponents of an EI element that are not present, a problem not shared by operations that affect abstract morphemes. Given its lateness in the derivation – after Vocabulary Insertion – it is not expected that morphophonological deletion should interfere with other, earlier operations.

2.2.6 If exceptionally inflectionless elements are actually of a different syntactic category

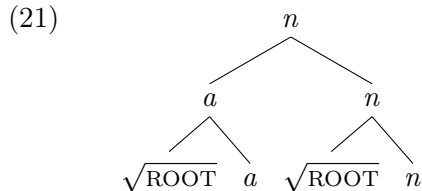
A reasonable hypothesis for the deficient syntactic distribution of exceptionally inflectionless elements is that they do not belong to their assumed syntactic category. The learner would use the cue of inflectionlessness as an indication that the element belongs not to the category of e.g. adjectives, but rather, to a different category, e.g. prepositions.

This mode of explanation relates to the literature on restricted syntactic distribution of a subset of elements; for example, Yang (2015) offers this type of explanation for the deficient distribution of English *a*-adjectives (*awake, asleep, afraid, alone, etc.*), which cannot appear as prenominal attributive modifiers (**the asleep man*). Yang, building on other research, correlates this property with other shared characteristics of locative particles and prepositional phrases, which have the same prohibition on attributive modification.

A different syntactic distribution is expected under this type of analysis, because the putatively EI element enters the syntactic derivation as a distinct category. For example, if an EI element is thought to be an adjective but is actually a preposition, it should behave like the latter and not the former in terms of its morphosyntactic distribution.

2.2.7 Compounding

Putative instances of EI attributive adjectives could plausibly be analyzed instead by the learner as being compounded with the head noun. Assuming primary compounds are formed as complex heads (e.g. Harðarson 2018), an adjective compounded with a head noun would look roughly as follows:



In this case, a node-sprouting rule applying to an MWd *a* would not apply to an adjective, resulting in inflectionlessness of the adjective.⁸

The hypothesis that EI elements are part of compounds makes syntactic predictions. In particular, these elements i) should not be permissible with intervening material between the head noun and the EI element and ii) should not be able to be modified with e.g. intensifiers if it is gradable (under the assumption that adjuncts target phrasal projections).⁹ This is illustrated for the English example *hot sauce*:

- (22)
- | | | | |
|----|-------------------|----|--------------------|
| a. | hot sauce | c. | #hot Mexican sauce |
| b. | #[very hot] sauce | d. | #hott-er sauce |

That inflectionless elements are part of compounds is a common intuition or speculation. However, as we will see, the predictions of a compounding analysis are often not borne out, suggesting a compounding analysis is incorrect for many cases of exceptional inflectionlessness.

⁸An issue arises for inflection that occurs in compounds, as happens in Icelandic; Harðarson (2016; 2017) analyzes such instances as adjunction of ϕ heads. Given that agreement ϕ projections do not exist in the current model, Harðarson’s analysis is not compatible with the views adopted here.

⁹See Lieber and Štekauer 2011 for discussion of various diagnostics.

2.2.8 Summarizing

In summary of this section, there are several different analytic options for capturing exceptional inflectionlessness. The options and their basic properties are listed below in the table. For the purposes of the phenomena explored in Sections 2.3 and 2.4, I contrast various options where the predictions meaningfully diverge (notably for compounding and allomorphy), though the options cannot always all be distinguished from each other.

Locus/Mechanism	Description	Predictions/Notes
Vocabulary Insertion	\emptyset realization	no pre-VI interaction expected; requires unexplored assumption
Impoverishment	Delete features	Default realization = \emptyset
Radical Impoverishment	Delete node	can affect subsequent operation
Node-Sprouting Exception	Null change	can affect subsequent operation
Morphophonological Deletion	delete exponents	late, no interaction, misses generalization
Different Category	Not an x	Does not behave like x
Compounding	Same MWd	*Modifiability, *Intervention

2.3 Interactions of EIness with the Postsyntax

This section examines case studies of exceptional inflectionlessness from several languages, including Latin, Icelandic, Bulgarian, and Bosnian/Serbian/Croatian (BCS) – with special attention paid to Bulgarian. The absence of agreement morphemes on elements is shown to affect (or not affect) with other postsyntactic processes, specifically movement and ellipsis. (See also Sections 3.3 and 3.4 on German.) In the next section – Section 2.4 – I examine putative syntactic effects of inflectionlessness in BCS and Italian.

The case studies in this section indicate that inflectionlessness does affect other post-

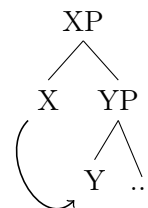
syntactic processes, and should therefore be encoded not as superficial allomorphy or morphophonology. The case studies also shed light on the precise workings of the postsyntactic operations involved in non-syntactic word formation. For several of the languages, derivational trapping analyses are presented to account for defectivity in distribution (Bulgarian and BCS).

The proposal advanced in this chapter is that any putative correlation between exceptional inflectionlessness and defectivity or alternation in morphosyntactic distribution actually stems from disruptions to postsyntactic processes. Various predictions fall out from this; some key predictions are as follows.

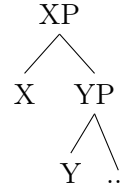
If a postsyntactic operation makes no reference to the inflectional status of elements, then there will be no disruption; the derivation will proceed unimpeded; and the output will be parallel to unexceptional cases. In other words, nothing interesting happens. In Section 2.3.1, I show this to be true for the operation that displaces the Latin conjunctive element *-que*.

The predictions become more interesting for instances in which postsyntactic operations refer to inflectional morphemes. In the simpler case, exceptional inflectionlessness results in an operation failing to be triggered, yielding an alternative derivation. This is most clearly exemplified by synthetic/analytic alternations. If a synthetic form is produced through postsyntactic movement, but this movement is not triggered in the context of EI elements, then the unmoved object should be pronounced *in situ*, meaning the analytic expression surfaces (23). In Section 2.3.2, I demonstrate this to be true of the operation that produces synthetic degree forms in Icelandic.

(23) a. movement = synthetic form ($Y\oplus X$)



b. movement not triggered = analytic form (X \sim Y)



In a more complex case, the result can be ungrammaticality due to derivational trapping. If an operation is still triggered in the context of an inflectionless element, but inflectionlessness renders an element an illicit target for the operation, the result is that the operation cannot be executed and the derivation crashes. Consider again the case of a synthetic form being produced through postsyntactic movement. If the movement is triggered, but the operation cannot proceed because the target is unexpectedly inflectionless, then the derivation will crash.

Slightly more concretely, if movement of D is triggered when it bears a definiteness feature, but the operation specifies that it moves to an adjacent inflected element, then the absence of inflection will cause the derivation to crash (represented informally here):

(24) For D[DEF], perform *R*

R: Adjoin D to a concatenated inflected element (e.g. an adjective)

This is argued in Section 2.3.3 to happen for a subset of Bulgarian speakers. Given the mechanics of the theory, we predict such crashes to arise. This is a type of morphology/morphology interaction: the exceptionality of inflectionlessness, however stated, is encoded somewhere in the postsyntactic component, and can thus have effects on other postsyntactic processes.

It is also possible for an operation to continue to be triggered in the context of an EI element, and for the operation to *skip over* the EI element. I argue that some speakers of Bulgarian treat EI adjectives this way (Section 2.3.3), and suggest that it is important for theory of locality of movement. It is also possible for an operation to be *triggered* by the absence of inflection, and for this operation to be disrupted by other processes, resulting in derivational trapping. I offer an analysis of data from BCS along these lines (Section 2.3.4).

In contrast, we predict that the narrow syntax should be insensitive to inflectionlessness, because the information about EI elements' exceptional status should be unavailable during the syntactic derivation. While there is much controversy as to the locus of agreement and case assignment in the grammar, I take A and A-bar movement to be (almost completely) uncontroversially syntactic. We thus expect, at minimum, that these types of movement should never be affected by exceptional inflectionlessness; the challenges to this view are explored in Section 2.4. The set of predicted possibilities that I explore in the following sections are summarized in (25) and (26).

(25) In the context of an exceptionally inflectionless element, the following can happen to postsyntactic processes:

- a. **A process is undisrupted.** If a process makes no reference to agreement nodes either in its conditions on triggers or its conditions on operands, then the process will be triggered and executed without issue, and its output will be parallel to unexceptional cases. For example, some process of affixation can occur that is insensitive to the status of the uninflected element, and the result should be grammatical, all else being equal. (See Section 2.3.1 on Latin.)
- b. **A process is not triggered and does not apply.** If the conditions on triggers are not satisfied by an EI element, then the process will not be triggered, and the derivation will continue. For postsyntactic movement, this will mean that an element is pronounced *in situ*. (See Section 2.3.2 on Icelandic.)
- c. **A process is still triggered but cannot be executed (i.e. derivational trapping).** This might happen, for example, if an element must move, but the only potential target is not consistent with the conditions on operands specified in the rule. See Section 2.3.3 for this type of analysis of some speakers of Bulgarian.
- d. **A process is still triggered, and its execution involves 'skipping over' the inflectionless element.** If, for example, a postsyntactic movement rule

refers to the presence of inflection, ignores inflectionless elements, but is able to identify other potential targets of movement, then an EI element will be treated as transparent for movement. (See Section 2.3.3 for an analysis along these lines for some speakers of Bulgarian.)

- e. **A process is triggered by the absence of inflection, which sometimes cannot be executed (i.e. derivational trapping).** For example, if the absence of inflection on an EI element triggers an operation that causes it to associate itself with a neighboring inflected element, then the execution of this operation will fail if the neighboring element is unexpectedly absent or lacks inflection. (See Section 2.3.4 on BCS case. See also Section 3.4 on German NPE.)

- (26) **Syntactic movement cannot be disrupted by inflectionlessness.** (See Section 2.4 on BCS and Italian.)

In the following subsections, I go through each case study to demonstrate that these proposals are on the right track. While many of these phenomena have been mentioned in the literature in passing, I offer novel evidence in most of the case studies that both confirms the existence of these patterns and elucidates their nature. Special attention is paid to Bulgarian, whose speakers vary in their treatment of EI elements – these facts are important to the theory of postsyntactic operations and the locality of movement.

The table in (27) summarizes the basics of the analyses presented in the following subsections.

(27)

Language	Phenomenon	Interaction
Latin	Position of displaced <i>-que</i> 'and'	None
Icelandic	Analytic variant used with inflectionless adjectives	Postsyntactic movement not triggered
Bulgarian	Definiteness marking cannot apply to inflectionless adjectives	Postsyntactic movement results in i) derivational trap because of postsyntactic movement; ii) skipping apparent intervener
BCS	Case with inflectionless nouns	Derivational trap due to EI par- asitism

2.3.1 Latin *-que*

In this subsection, I demonstrate how inflectionlessness in Latin has no effect on the postsyntactic movement process that moves the conjunction element *-que* to a neighboring element, offering concrete details on both the movement operation and the derivation of inflectionlessness.

In Latin, the suffix *-que* is used in conjunction, and is typically described as attaching to the first word of the second conjunct. The claim from Embick and Noyer 2001; Embick 2007b is that *-que* originates ‘between’ two conjuncts and is displaced onto the first MWd of the second conjunct. As discussed in Section 1.4, that *-que* is placed onto an adjacent MWd and not the head of the second conjunct is evident from examples like (28), where *aPs* are conjoined, but the second adjective is modified by a preadjectival adverb. In such cases, *-que* is placed on the adverb – an adjacent MWd – not the adjective.

(28) ...eae vero, quae gignunt, [inbecillos vix-**que** vitales]
 those.NOM.F.PL indeed who give.birth weak.ACC.M.PL hardly-and alive.ACC.M.PL

edunt.
 produce.3.PL
 ‘...those (women) who do give birth, produce weak and hardly living ones.’

(Celsus, De Medicina 2.1.14)

-que can also be suffixed to an inflected adjective, as in (29).

- (29) [bon-i puer-i] [bon-ae-**que** puell-ae]
 good-NOM.M.PL boy-NOM.M.PL good-NOM.F.PL-**and** girl-NOM.F.PL
 ‘good boys and good girls’ (adapted from Embick and Noyer 2001, 575)

As evident from (29), *-que* appears outside of inflectional affixes, which express gender, number, and case features. However, the distribution of elements to which *-que* adjoins is wide, as it also adjoins to nouns (30-a), verbs (30-b), adverbs (30-c), and some prepositions (30). Since adverbs and prepositions are not inflected, it stands to reason that the rule adjoining *-que* is insensitive to the agreeing status of a potential target.

- (30) a. diu noctu-que
 day.ABL night.ABL-and
 ‘by day and by night’
- b. vivimus vigemus-que
 live.1.PL flourish.1.PL-and
 ‘we live and we flourish’
- c. bene pudice-que adservatur
 well modestly-and been.chaperoned
 ‘[She’s] been chaperoned well and modestly.’
- d. sine scutis sine-que ferro
 without shields without-and sword
 ‘without shields and without swords’ (adapted from Embick 2007a)

While adjectives are generally inflected, there are EI adjectives such as *nequam* ‘worthless; wicked’ and *fas* ‘unholy, wicked’, among others, that are not (see Lewis and Short 1879). The adjectival status of these exceptions is supported by e.g. their ability to be coordinated with an inflected adjective using the conjunction element *et* (31) as well as their ability to form synthetic comparatives and superlatives (*nequam, nequior, nequissimus*).

- (31) postremo illi sunt improbi, vos nequam et gloriosae
 lastly they are immoderate, you.PL wicked and conceited.NOM.F.PL
 ‘Lastly, they are immoderate, and you are wicked and conceited’

(Pl. Truc. 157)

The indeclinability of *nequam* is limited to its positive form; its corresponding synthetic comparative, *nequior*, and its superlative, decline like other adjectives (e.g. *nequioris*, ‘wicked.CMPR.GEN.SG’).

The way in which the inflectionlessness of *nequam* is stated is compatible with several of the possibilities discussed in Section 2.2. For concreteness, I propose that the inflectionlessness is derived through deletion (radical impoverishment) under (subword) adjacency, as outlined in (32).¹⁰

- (32) If $\sqrt{\text{ROOT}} \oplus a\text{Infl}$ and $\sqrt{\text{ROOT}} = \{\sqrt{\text{NEQUAM}}, \text{etc.}\}$, perform *R*

R: Delete *aInfl*

I assume that the node-sprouting of agreement morphemes occurs at the MWd level for *a*, and that the formation of synthetic comparatives through movement precedes node-sprouting of *a* (see Section 1.3 on both points). Because the deletion operation necessarily occurs after node-sprouting, this correctly predicts that the synthetic comparative and superlative forms are inflected (e.g. *nequissim-us* ‘wicked.NOM.M.SG’).

Indeclinability appears to have no effect on suffixation by *-que*, as evident from the example with *nequam* in (33).

- (33) quin malus nequam-que sis
 even bad.AGR evil-and be.2.PL.SBJ
 ‘to be bad and evil’

(Pl. As. 305)

Why does the inflectionlessness of the adjective have no effect? I would like to suggest that there is no disruption because the movement rule make no specific reference to inflec-

¹⁰In order for this adjacency to hold, *a* must be pruned out of the way first (in the sense of Embick 2010), such that the root is adjacent to *aInfl*. An alternative formulation could involve diacritic features on *a* occurring with specific roots, which trigger deletion of *aInfl*.

tional nodes, hence the insensitivity to whether inflection is present on an adjective. The insensitivity to category is supported by the ability of *-que* to combine with various categories, including adjectives, nouns, adverbs, and prepositions (e.g. Embick 2007b); among these categories, adverbs and prepositions are not inflected.

- (34) sine scutis sine-que ferro
 without shields without-and sword
 ‘without shields and without sword’ (adapted from Embick 2007b, 312)

The Local Dislocation rule from Embick and Noyer (2001); Embick (2007b) correctly captures the distribution of *-que*. Because it is insensitive to the category with which it is combining, it only makes reference to the MWd property – after Local Dislocation, it is concatenated with an adjacent SWd, also without reference to whether it is an inflectional affix (36).

- (35) (Informal) For $-que \wedge X$, perform *R*
R: Move *-que* to the concatenated X

- (36) a. $[que]_M \wedge [circum]_M \rightarrow [circum \oplus que]_M$
 b. $[que]_M \wedge [nequam]_M \rightarrow [nequam \oplus que]_M$

In sum, no disruption arises with the postsyntactic movement of *-que* with inflectionless elements in Latin because the movement operation does not refer to inflectional nodes.

2.3.2 Icelandic inflectionless adjectives and synthetic degree forms

This section shows how the inflectionlessness of Icelandic adjectives is linked to the same exceptionality that prevents the formation of synthetic degree forms (comparatives and superlatives). I present an analysis that links the two through a diacritic feature which ‘shuts down’ postsyntactic processes.

The case of Icelandic is one in which inflectionless adjectives cannot produce synthetic comparative and superlative forms, resulting in an alternative analytic strategy. This is

consistent with a view in which these synthetic forms are produced through postsyntactic movement of a degree morpheme (Deg[CMPR] or Deg[SPRL]), which appears to be sensitive to the inflectionfulness of a potential target. I propose to link inflectionlessness with the inability to form synthetic degree forms through a diacritic feature [α] that species null change for all operations that target the node containing [α].

Icelandic comparative and superlative adjectives are typically formed synthetically with the suffix *-(a)r* and *-(a)st*, respectively.¹¹ Typical example forms are given in (37).

- (37) a. fal.leg-ur / fal.leg-r-i / fal.leg-ast-ur
 beautiful-AGR / beautiful-CMPR-AGR / beautiful-SPRL-AGR
 b. hvass-Ø / hvass-ar-i / hvass-ast-ur
 sharp-AGR / sharp-CMPR-AGR / sharp-SPRL-AGR
 c. varkár-Ø / varkár-ar-i / varkár-ast-ur
 careful-AGR / careful-CMPR-AGR / careful-SPRL-AGR
 (adapted from examples in Thomson 1987, 312-314)

Other types of comparative expressions in the language are composed analytically using *meira* ‘more’, or with countable nouns, analytically using *fleira*.

- (38) a. (það er) meira kaffi.
 there is more coffee
 ‘(There is) more coffee’
 b. (það eru) fleiri töflur.
 there are more tables
 ‘(There are) more tables’
- (39) Hún syngur meira en hann (í óperunni)
 He sings more than her in opera.DEF
 ‘He sings more than she does (in the opera).’

While Icelandic does not have the same robust synthetic/analytic alternation among adjectives seen in English, analytic comparatives with *meira* do appear with adjectives in one corner, namely, with uninflected adjectives (41). Whereas inflected adjectives are ungrammatical with *meira* in conventional comparatives, EI adjectives such as *hissa* ‘surprised’,

¹¹There are also morphophonological alternations in the realization of some comparatives and superlatives; see Thomson 1987.

which fail to form synthetic comparatives and superlatives, can appear with *meira* (examples adapted from Thráinsson 2007, 112).

- (40) a. rík-ar-i /rík-ast-ur b. ?*meira/mest rík-ur
rich-CMPR-AGR /rich-SPRL-AGR more/most rich-AGR
‘richer/richest’ ‘richer/richest’
- (41) a. meira/mest hissa
more/most surprised.
‘more/most surprised’
- b. *hissa-r-i/*hissa-st-ur
surprised-CMPR-AGR/surprised-SPRL-AGR

According to Sigurðsson (2009), adjectival stems ending in an unstressed vowel are inflectionless. The following list of uninflectable adjectives is adapted from Thomson (1987, 308). Most of Thomson’s list is included; however, it could be objected that several of these are more likely to be nominal modifiers without being adjectives.

- (42) aflavana ‘without strength’ hugsí ‘lost in thought’
andvaka ‘sleepless’ hvaða ‘what kind of, which’
einmana ‘lonely’ hvumsa ‘startled, taken aback’
einstaka ‘single, solitary’ jafnaldra ‘of the same age’
fullvalda ‘sovereign’ púkó ‘coarse’
forviða ‘astonished, surprised’ samfeðra ‘having the same father’
harmdauði ‘regrettably dead’ samferða ‘traveling together’
hissa ‘astonished, surprised’ sammála ‘in agreement’
hlessa ‘astonished, surprised’ sammæðra ‘having the same mother’
sveitó ‘coarse’

Sigurðsson (2009) also mentions *brosandi* ‘smiling’, and *passandi* ‘fitting, appropriate’, though these appear to be formed with the participial morpheme *-andi*, which is also obligatorily inflectionless. Some other underived adjectives include *sexí* ‘sexy’, *spúkí* ‘spooky’, *ósjálfbjarga* ‘helpless’, among many others.

It is important to note that inflectionless adjectives include more than just those that end in a vowel, as is true for *prívat* ‘private’ and for some speakers, *smart* ‘fashionable’. Like other EI adjectives, these adjectives also fail to form synthetic degree forms (43).

- (43) a. meira *prívat* / **prívat-ar-i*
 more private / *private-CMPR-AGR
 ‘more private’
- b. meira *smart* / **smart-ar-i*
 more fashionable / fashionable-CMPR-AGR
 ‘more fashionable’

Strikingly, for other speakers, *smart* is inflected in at least some cases, as in *Marta Smart-a* (‘Marta fashionable-AGR’, a host of Smartland, and also the name of a children’s book).¹² For these speakers, the correct form is *smart-ar-i* ‘fashionable-CMPR-AGR’.

The analytic behavior of EI adjectives is parallel to the behavior of present participles suffixed by *-andi*. These participles are also invariant across feature combinations – as illustrated in (44) – and like inflectionless adjectives, require analytic comparatives (45).

- (44) a. meira *spenn-andi*
 more excite-PTCP
 ‘more exciting’
- b. meira *upplífg-andi*
 more uplift-PTCP
 ‘more uplifting’
- (45) a. meira *spúkí* / **spúkí-r-i*
 more spooky / spooky-CMPR-AGR
- b. meira *upplífg-andi* / **upplífg-andi-r-i*
 more uplift-PTCP-CMPR-AGR / uplifting-PTCP-CMPR-AGR

The generalization is that i) synthetic degree forms are not available with EI adjectives but ii) analytic expressions with *meira* are (even though they are not generally acceptable with adjectives). In some sense, this does not seem surprising, given that an analytic strategy exists, and by hypothesis, is used as a ‘default’ option when the movement operation – which would produce a synthetic comparative – fails to apply. Because indeclinable adjectives – for reasons to be clarified – are exceptions to the movement rule, the Deg morpheme remains

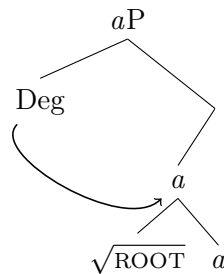
¹²Thanks to Einar Freyr Sigurðsson for discussion.

in situ, and consequently, is pronounced as a separate MWd.

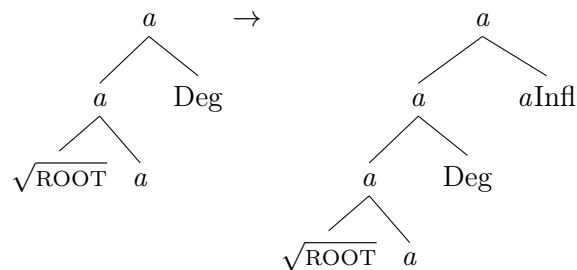
One further thing an analysis should capture is that, cross-linguistically, there is no necessary implicational relationship between inflectionlessness (in the positive form) and the inability to form a synthetic comparative. Recall from Section 2.3.1 that in Latin, the inflectionless *nequam* ‘wicked’ does have synthetic (and inflected) comparative and superlative forms: *nequior* and *nequissimus*. In German, *sexy* ‘sexy’ is uninflected, but it has a corresponding comparative form *sexy-er*, which is inflected just like other adjectives (see Section 3.3). Nevertheless, in Icelandic, inflectionlessness and the inability to form synthetic degree forms appear to be linked.

I propose a postsyntactic operation adjoins the head Deg[CMPR] or Deg[SPRL] to *a* when Deg belongs to the specifier of *a*P. In the production of a typical inflected adjective, a node-sprouting rule applies to the MWd headed by *a*. In order to produce the correct order, a Deg morpheme must adjoin to *a* prior to node-sprouting, such that *a*Infl occurs outermost. The resultant MWd will be an inflected comparative adjective such as *fal-leg-r-i* ‘beautiful-ADJ-CMPR-AGR’. (This is consistent with the ordering of operations presented in Section 1.3.)

(46) a. Movement



b. Node-sprouting



Further evidence in favor of an MWd analysis for node-sprouting comes from compound

adjectives (47) and deadjectival nominals (48). In both cases, there are adjectival heads that are not MWds, and as a consequence, these adjectives remain uninflected.

- (47) fransk(*-ur)-kanadísk-ur maður
 French(-M.SG.NOM-Canadian-M.SG.NOM person
 ‘French-Canadian person’
- (48) trúverð-ug-ur / trúverð-ug(*-ur/*-t)-leik.a
 credible-ADJ-M.SG.NOM / credible-ADJ-AGR-NMLZ.AGR
 ‘credible / credibility’

Note that this conception of synthetic degree formation is not based on linear adjacency. This correctly captures, for example, the fact that a synthetic form is not used when the comparative is linked to the scale identified by the noun and not a linearly adjacent adjective, as in (49).

- (49) a. meiri falleg tónlist
 more.AGR beautiful.AGR music
 ‘a greater amount of beautiful music’
- b. #falleg-r-i tónlist
 beautiful-CMPR-AGR music
 ‘a greater amount of beautiful music’ (possible: music that is more beautiful)

Returning to EI adjectives, neither movement of Deg nor node-sprouting occurs. One seemingly natural way of relating the two non-applying processes would be to have the triggering of Deg refer directly to *aInfl*. However, this presents an ordering paradox, as the movement of Deg is hypothesized to precede node-sprouting (see also Section 1.3). Ordering movement prior to node-sprouting correctly captures the order of morphemes: agreement morphology appears exterior to the comparative morpheme:

- (50) ljót-ar-i / *ljót-i-ar
 ugly-CMPR-AGR / ugly-AGR-CMPR
 ‘uglier’

Consequently, Deg could not be sensitive to the presence or absence of *aInfl*, because it

should not be present at that point in the derivation.

I propose that inflectionless adjectives such as *prívat* only occur as combinations of roots with the categorial head *a* bearing a diacritic feature $[\alpha]$. The determination of which roots occur with this head is not based solely on e.g. phonological criteria – as *prívat* does not have the vowel-ending profile described by Sigurðsson (2009). The selection of roots with certain heads bearing $[\alpha]$ is not arbitrary, but the assignment of α to certain roots is represented lexically, rather than being derived conditionally in the postsyntax; see Bobaljik (2012) for similar discussion of English synthetic comparatives.¹³ Like inflectionless adjectives, I propose present participles all bear the diacritic feature $[\alpha]$ on their Asp head.

The feature $[\alpha]$ ‘turns off’ all postsyntactic operations that target the node that contains $[\alpha]$, with the exception of Vocabulary Insertion. In the current framework, that means all postsyntactic rules are assigned a null change option that is invoked when the node of a target specified in a rule bears $[\alpha]$. This is represented in (51) for node-sprouting.

- (51) For an MWd *a*, perform *R*(SPROUT)
- R*(SPROUT): If *a* bears $[\alpha]$, no change.
- ELSE: Adjoin *aInfl* such that [*a* | *aInfl*]

When the rule is switched off, Deg does not move; consequently, it is pronounced *in situ* with *meira*.¹⁴

The same ‘switching off’ of a rule applies to the movement that produces synthetic forms. It should now be clear why inflectionless adjectives necessarily involve analytic rather than comparative and superlative expressions: both word formation and node-sprouting are prevented by the presence of $[\alpha]$.

¹³Given that $[\alpha]$ is a morphological feature, I do not assume that it is bundled with *a* as a syntactic object of LIST 1. Rather, it is assigned to certain heads in the postsyntactic module.

¹⁴*meira* does not look monomorphemic – when it merges with a noun, it does show inflectional differences depending on e.g. the gender features of the noun, as in *meira kaffi* ‘more.AGR coffee’) versus *meiri tónlist* ‘more music’. While *meira* in analytic comparatives of adjectives is invariant, this is an issue of agreement, not of node-sprouting. I propose that it too is subject to a node-sprouting operation, which targets Deg MWds, producing *meir-a*. This is consistent with the ordering of movement of Deg prior to node-sprouting; no double-sprouting will occur if a comparative form is synthetic because Deg will belong to the same MWd at that point in the derivation.

As stated above, the linkage between the two is supported by the evidence from *smart*, which for some speakers, is inflected in some cases (e.g. the weak form *smart-a* as in *Marta smarta* ‘Marta fashionable-AGR). For this type of speaker, the synthetic form *smart-ar-i* appears to be available.

A further prediction is that syntactic word-formation should be unhampered by the diacritic feature. For example, nominalization of inflectionless adjectives should be possible; this is borne out.

- (52) einmana-leiki
 lonely-NMLZ
 ‘loneliness’

Morphological diacritics that prevent synthetic forms have also been invoked elsewhere in the literature. Hankamer and Mikkelsen (2002, 2005), for example, point to exceptions among nouns that can take the Danish definite determiner.¹⁵ The definiteness alternation in Danish essentially moves D to (suffix to) the noun, unless this process is blocked by intervening material, in which case D is pronounced *in situ* as a freestanding determiner (Embick and Noyer 2001; Embick and Marantz 2008; among others).

- (53) a. hest-en
 horse-DEF
 ‘the horse’
 b. *den hest
 the horse
 c. den gamle hest
 the old horse
 ‘the old horse’
 d. *gamle hest-en
 old horse-DEF

(Embick and Marantz, 2008, 40)

Hankamer and Mikkelsen (2002, 146-151) observe that nouns with the suffix *-ende* (which is used for present participles) cannot take the definite suffix; consequently, they use the freestanding definite article in the ‘wrong’ syntactic context (54).

¹⁵See also Bobaljik 2012 on English adjectives that fail to form synthetic comparatives and superlatives.

This leads to a proposed revision of the D movement operation, the formulation of which raises questions for the theory of locality of postsyntactic movement.

I first describe the basic properties of Bulgarian definiteness marking, motivating the specific account of movement of D to the head of an adjacent phrase. I then discuss EI elements and their inability to take on definiteness marking. I show that they are indeed adjectival modifiers and offer novel evidence indicating that for some speakers, there is no viable option when they would be targeted (i.e. a derivational trapping situation); for other speakers, EI elements become transparent. I discuss how EI elements accept definiteness marking in one specific circumstance – in empty noun constructions – and show how the current account accommodates this exception. I then offer some concluding remarks on Bulgarian definiteness marking.

Basic description and analysis of definiteness marking

The Bulgarian definite suffix occurs on nouns; if any adjectives precede the noun, then the definite suffix applies to the first adjective instead (see Franks 2001; Embick and Noyer 2001; Dost and Gribanova 2006; Arregi and Nevins 2013; Harizanov and Gribanova 2015; Harizanov 2018; among others).¹⁶

- (56)
- | | | | |
|----|--|----|---|
| a. | kniga-ta
book-the
'the book' | c. | xubava-ta interesna kniga
nice-the interesting book |
| b. | interesna-ta kniga
interesting-the book
'the interesting book' | d. | *xubava interesna-ta kniga
nice interesting-the book
'the nice, interesting book' |
- (Dost and Gribanova, 2006, 132)

I adopt the view from Embick and Noyer (2001) and others that the definite suffix corresponds to postsyntactically moved D.¹⁷ Because the original Lowering analysis from

¹⁶See Rudin 2018 and references therein for discussion of the appearance of multiple determiners in non-standard varieties of Bulgarian and Macedonian.

¹⁷Some authors regard the morphophonological interactions with the definite suffix as evidence favoring an inflectional rather than a clitic analysis of the definite marker; see especially Franks 2001; Dost and Gribanova 2006; Rudin 2018. See Embick and Noyer 2001 for arguments against this view.

Embick and Noyer (2001) cannot be preserved – under the current assumption that adjectival heads are not complements of D (cf. Dost and Gribanova 2006), but rather, phrasally adjoin to *nP* – I instead adopt the view that D undergoes a linearly defined movement operation, which is defined more explicitly below.

That this movement is postsyntactic and sensitive to linear information is supported by the fact that it applies to the first adjective of a modifier, irrespective of the presence of postadjectival complements (57) (e.g. Franks 2001; Harizanov 2018, 297).¹⁸ More strikingly, for conjoined adjectives, the definite marker appears only on the first adjective, and cannot appear only on the second. This is true both for intersective coordination, where the adjectives are both predicated of the same noun (as in (58-a)) and for collective or ‘split’ coordination, where each conjunct picks out a distinct group (58-b)-(59) (see Heycock and Zamparelli 2005; Champollion 2016 on split coordination).

- (57) [gorda-ta sās sina si] majka
 proud-DEF with son her mother
 ‘the mother proud of her son’ (Harizanov, 2018, 296)
- (58) a. [nova-ta i interesna] kniga
 new-DEF and interesting book
 ‘the new and interesting book’ (Harizanov, 2018, 296)
- b. bālgarsk-i-ja i rusk-i narod-i
 Bulgarian-M.SG-DEF and Russian-M.SG nation-PL
 ‘the Bulgarian and Russian nations’ (two nations: one Bulgarian and the other Russian) (Harizanov and Gribanova, 2015)
- (59) a. bel-i-te i čern-i šakhmatni figuri
 white-PL-DEF and black-PL chess pieces
 ‘the white and black chess pieces’ (two sets of chess pieces: one set black and the other white)
- b. *bel-i i čern-i-te šakhmatni figuri
 white-PL and black-PL-DEF chess pieces
 ‘the white and black chess pieces’

¹⁸Throughout this subsection, I retain the notational conventions of cited works, which sometimes vary with respect to each other.

Novel evidence of the linear character comes from conjoined nouns. When two conjoined nouns refer to the same individual (i.e. the coordination is intersective), the definite marker is applied to the first noun and not the second.¹⁹

- (60) prijatelj-jat i kolega(*-ta)
 friend-DEF and colleague-DEF
 ‘the friend and colleague’ (one person)

A further novel point about the linear character of movement concerns complex cardinals. According to Nicolova (2017, 197-198), multiplicative cardinal expressions place the definite marker on the first numeral. My consultant agrees that this is a natural place to put the definite marker.

- (61) sto-tè dùši
 hundred-DEF people
 ‘the hundred people’

- (62) a. sto-tè hiljadi dùši b. pet-tè miliona dùši
 hundred-DEF thousand people five-DEF million people
 ‘the one hundred thousand people’ ‘the five million people’

This is consistent with the ‘cascading’ analysis of Ionin and Matushansky (2018) for

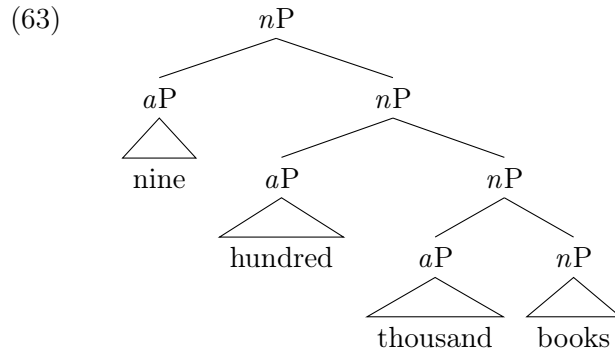
¹⁹ The situation with split coordination is more complex. It appears that coordinated adjectives differ from coordinated nouns in this respect. For coordinated adjectives with a split interpretation, only the first adjective is inflected (i), consistent with what has been said. However, if two nouns are coordinated with a split interpretation, then, according to my consultant, each noun must be suffixed with the definite marker (ii).

- (i) bǎlgarask-ij-a i rusk-i narod-i
 Bulgarian-M.SG-DEF and Russian-M.SG nation-PL
 ‘the Bulgarian and Russian nations’ (Harizanov and Gribanova, 2015)

- (ii) bašta-ta i sin*(-at)
 father-DEF and son-DEF
 ‘the father and son’

Harizanov and Gribanova (2015) analyze (i) as ATB movement of *nP* from two coordinated *nPs*, each one of which is modified by a different *aP*. However, if split interpretation is available with this type of *nP* coordination, we should expect the same pattern of definite marking on (ii), contrary to fact. I leave this issue to future research.

multiplicative numerals. In particular, if cardinals are treated as adjectival adjuncts, then iterative adjunction to *nP* is responsible for the expressions of complex cardinals. This is illustrated by the tree in (63) (Ionin and Matushansky, 2018, 56).²⁰



If this is the correct structure for multiplicative cardinals, then it is correctly predicted that definiteness marking should apply to the first numeral.

Despite the linear condition, the intensifier *mnogo* ‘very’, while intervening linearly, does not receive the definite suffix, nor does it block affixation to the adjective it modifies (Franks 2001; Dost and Gribanova 2006; among others). This is not just an idiosyncrasy of *mnogo*; as Franks (2001) shows, other adverbs are also ignored.²¹

²⁰As discussed by Kramer (2010, 225), complex numerals in Amharic are treated as a single element for the purpose of definite suffixation, including both additive (i) and multiplicative numerals (ii).

(i) asra aratt-u tāmari-wotfj
 ten four-DEF student-PL
 ‘the fourteen students’ (Kramer, 2010, 224)

(ii) hulätt mäto-wotfj-u tāmari-wotfj
 two hundred-PL-DEF students
 ‘the two hundred students’ (Kramer, 2010, 224)

This can be made sense of if we follow Kramer’s suggestion that complex numerals in Amharic may form their own constituent, such as a complex head. It would then be necessary to say that Amharic and Bulgarian form (at least some) complex numerals differently.

²¹Rudin (2018) suggests the transparency of adverbs provides an argument against the placement of the definite suffix as a second-position element. However, the formulation I provide illustrates how the notion of second position can be defined in a natural way that accommodates certain types of transparency.

- (64) a. mnogo interesna-ta kniga
 very interesting-DEF book
 ‘the very interesting book’ (Dost and Gribanova, 2006, 133)
- b. dosta glupava-ta zabeležka
 quite stupid-DEF remark
 ‘the quite stupid remark’ (Franks, 2001)
- c. pribilizitelno sto-te duši
 approximately hundred-DEF people
 ‘the approximately one-hundred people’ (Franks, 2001)

Another type of ‘transparency’ can be seen with certain types of complex numerals. When multiplicative numerals are compounded into single elements, the definite marking applies to the entire numeral; it cannot break up the compound numeral.

- (65) a. pet.deset-te duši
 five.ten-DEF people
 ‘the fifty people’
- b. *pet-te deset duši
 five-DEF ten people
 ‘the fifty people’

This is unlike the above cases in which the first numeral of a complex is suffixed. I assume for ‘same-word’ numerals, some form of compounding keeps the numerals in the same constituent XP, which makes definite suffixation treat the complex numeral as a single object (though see Ionin and Matushansky 2018 for cross-linguistic syntacticosemantic and morphological evidence against this type of structure). This is consistent with the general strategy of definite placement in compounds, which occurs at the end of the compound, on its head:²²

- (66) a. òfis tehnika(-ta)
 office equipment-DEF
 ‘(the) office equipment’
- b. kandidàt-studènt(-at)
 candidate-student-DEF
 ‘(the) applicant (student)’

(Nicolova, 2017, 147)

A compounding analysis would also explain the behavior of complex ordinals, which take

²²See Nicolova 2017, 147 for potential counterexamples, where it is likely that the rightmost member might not be the head, as in *cigulàr(-jat)-virtuòz* ‘violinist-DEF virtuoso’.

inflectional marking only at their rightmost edge (see Section 1.3 on compounds). The rightmost edge of the ordinal is also where the definite marking occurs.

(67) pet-tè miliòna dùši
 five-DEF million people
 ‘the five million people’

(68) a. milion-ij-at čovek b. pet milion-ij-at čovek
 million-M.SG-DEF person five million-M.SG-DEG person
 ‘the millionth person’ ‘the five-millionth person’

One further case in which material does not intervene comes from additive numerals, for which the definite marker can be placed at the end of the numeral expression (in contrast with multiplicative numerals) (Nicolova, 2017, 197). Note that this happens even when the additive expression contains multiplicative numerals as part of their expression (69).²³

(69) a. trideset i dvàma-ta dùši
 thirty and two-DEF people
 b. stò petdesèt i četiri-tè dùši
 hundred fifty and four-DEF people
 c. chiljàda i dvèsta-ta dùši
 thousand and twenty-DEF people

The additive numeral facts indicate that a more complex view of the target is necessary than strict linear adjacency, though I leave a full analysis of the additive numeral facts to future research.²⁴

²³Speakers I have consulted do not always find for additive numerals that the definite marker is best at the end. For example, some speakers report for combinations of multiplication and addition that it is acceptable or preferred to place the definite marker after the first numeral rather than at the end. (Thanks to members of the Slavic Linguistics Society Facebook page for discussion.)

(i) a. dvesta-**te** chiljadi i dvama duši v publikata
 two.hundred-DEF thousand and two people in audience.DEF
 ‘the 200,002 people in the audience’
 b. dvesta chiljadi i dvama-**ta** duši v publikata
 two.hundred thousand and two-DEF people in audience.DEF
 ‘the 200,002 people in the audience’

²⁴As mentioned above, the multiplicative numeral pattern – in which the first numeral is targeted – is consistent with a version of Ionin and Matushansky’s (2018) ‘cascading’ approach, where each numeral is adjoined iteratively to the nominal. For additive numerals, these authors argue for an *nP* deletion account, for which expressions like *three hundred and forty students* are treated as having deletion like *three hundred*

An analysis that makes use of Local Dislocation between adjacent MWds faces challenges, without the further assumption that certain elements are transparent. I propose (provisionally) instead that the linearly defined rule that suffixes D is characterized through * adjacency: D adjoins to the leftmost element in its complement, with its target unspecified. This accounts for the distribution of the affix on either adjectives or nouns, depending on what the neighboring element is, and it also captures the transparency of adverbs. The rule is outlined in (70), where XP stands for any functional projection.²⁵

(70) (provisional) For D[DEF] * [XP ...], perform *R*

R: D moves to the head of XP for D * [XP ...]

The basic facts which led to the linear characterization (70) are summarized in the table below.

students and forty students (Ionin and Matushansky, 2018, 123). However, this would incorrectly predict that the placement of the definite marker should be after the first numeral, as this would be comparable to the split coordination facts discussed in Footnote 19, where the first adjective in a coordinate phrase is indeed the one marked with the definite suffix. The analysis of additive numerals from Ionin and Matushansky (2018) is thus inadequate for capturing the distributional facts for the definite marker.

²⁵This formulation requires certain assumptions about coordinated adjectives in Bulgarian, which differ from the assumptions with respect to coordination adopted in other places in the dissertation. In particular, in order for the definite marker to apply to the first conjunct and not the second, the two conjuncts must be linearized with respect to each other already at the point of displacement of D (and the phrasal boundary of the coordinate phrase must be transparent to the operation). This is represented in the following structure, with the phrase whose head is targeted in bold:

(i) D * [[**aP** * & * aP]_{aP} * nP]_{nP}

This is distinct from definiteness suffixation in Amharic (discussed in Section 1.4), where coordinated attributives each receive definite marking obligatorily (see Kramer 2010):

(ii) t'ik'ur-u inna/wäyimm sämayawi-w kwas
 black-DEF and/or blue-DEF ball
 'the black and/or blue ball' (Kramer, 2010, 209)

However, as mentioned in Footnote 19, Bulgarian coordinated nouns are unlike adjectives in that they bear obligatory definite marking on each conjunct, thus resembling the Amharic pattern. I leave these issues to future research.

	Description of Expression	Definite suffix placement
Linearity	Lone noun	on the noun
	Prenominal adjectives	on the first adjective
	Adjectives with postadjectival complements	on the adjective, not after the whole modifier
	Adjectival and nominal coordination	first conjunct
	Complex multiplicative numeral	first numeral (word)
Transparency	Intensifiers/adverbs	intensifiers/adverb skipped
	Morphologically complex compound numeral	after numeral word
	Nominal compounds	at the end of the compound
	Complex ordinal numerals	at the end
	Complex additive numerals	can be at the end

While (70) is sufficient for capturing the data so far, we will observe that a more complex operation is called for in dealing with exceptionally inflectionless elements.

Inflectionless elements

There is a class of adjectives that generally do not accept the definiteness suffix (Halpern 1995, 164-165; Spencer and Luís 2012, 128-129).²⁶ While Bulgarian adjectives generally inflect (71) for gender and number (with gender distinctions neutralized in the plural), exceptionally inflectionless adjectives are indeclinable (72). Whereas the definite suffix occurs with inflected prenominal attributive adjectives (73), it cannot appear with EI adjectives (74). (Note that the EI expressions in (72) that lack the definite suffix, are not ambiguous between being indefinite and definite; they can only be interpreted as indefinite.)

²⁶I am grateful to Boris Harizanov (p.c.) for bringing this work to my attention, and Steve Franks (p.c.) for helpful discussion. I especially would like to thank Joseph Benatov (p.c.) for his extensive discussion of the data. It should be noted that the judgments reported here were confirmed with multiple native speakers; however, there may be more variation than is captured here, a possibility which merits further research.

- (71) a. *interesen* *čovek* / *interesna* *žena* / *interesno* *dete*
interesting.M.SG person / interesting.F.SG woman / interesting.N.SG child
‘an interesting person/woman/child’
- b. *interesni* *khora/ženi/detsa*
interesting.PL people/women/children
‘interesting people/women/children’
- (72) a. *serbez* {*čovek/khora*} / *serbez* {*žena/ženi*} / *serbez* {*dete/detsa*}
bold {person/people} / bold {woman/women} / bold {child/children}
- b. *erbap* {*čovek/khora*} / *erbap* {*žena/ženi*} / *erbap* {*dete/detsa*}
skillful {person/people} / skillful {woman/women} / skillful {child/children}
- (73) a. *interesn-i-jat* *čovek* / *interesn-a-ta* *žena* / *interesn-o-to*
interesting-M.SG-DEF person / interesting-F.SG-DEF woman / interesting-N.SG
dete
child
‘the interesting person/woman/child’
- b. *interesn-i-te* *khora/ženi/detsa*
interesting-PL-DEF people/women/children
‘interesting people/women/children’
- (74) a. **serbez* [-a/-ta/-to-/-at/-te] {*čovek/khora/žena/ženi/dete/detsa*}
bold [-DEF] {person/people/woman/women/child/children}
- b. **erbap* [-a/-ta/-to-/-at/-te] {*čovek/khora/žena/ženi/dete/detsa*}
skillful [-DEF] {person/people/woman/women/child/children}

The following is a list of EI elements taken in part from Nicolova (2017) and in part from examples offered by my consultants. Many of them are Turkish loanwords; see Krūsteva 2000.

- (75) *chešit* ‘weird(o)’ *inat* ‘stubborn’ *sexy* ‘sexy’
chic ‘chic’ *kofti* ‘shitty’ *super* ‘super’
erbap ‘skillful’ *serbez* ‘brash’
extra ‘extra’ *sert* ‘assertive’

There is some variation with respect to which of these adjectives can be declined. For instance, one of my consultants finds it acceptable to use *inat-a žena* ‘stubborn-F.SG woman’,

but has invariant *kofti*. And though it has not been noted in the theoretical literature, some of these items are less familiar to speakers from Sofia; some of my consultants inform me that a few of the items, including the one that has been referred to most commonly in the theoretical literature – *serbez* – do not belong to their active vocabulary and are barely within their awareness, though this is not true across all of the items. Some of the most often used ones according to my consultants are *erbap*, *inat*, and *kofti*.

It has been reported that EI adjectives cannot be ‘skipped’ such that the definite suffix occurs on the noun instead (76) (cf. Halpern 1995; Spencer and Luís 2012, 129). One of my consultants agrees that this is indeed the case:

- (76) a. **serbez* {*čovek-at* / *žena-ta* / *dete-to*}
bold person-DEF / woman-DEF / child-DEF
‘bold person/woman/child’
- b. **erbap* {*čovek-at* / *žena-ta* / *dete-to*}
skillful person-DEF / woman-DEF / child-DEF
‘skillful person/woman/child’

The ungrammaticality does not stem from an incompatibility with semantic definiteness (77), as these adjectives are compatible with demonstratives (Spencer and Luís, 2012, 129). Demonstratives do not trigger definiteness marking on adjectives or nouns, and work perfectly with EI adjectives (77) for all speakers. The issue also appears not to stem from phonological incompatibility of the definite marker with the adjective, as it becomes possible to use the definite marker in environments in which these elements exhibit nominal behavior, most productively as nicknames (78) (an issue to which I return below).

- (77) a. *tozi serbez čovek* / *tazi serbez žena* / *tova serbez dete*
that.M.SG bold person / that.F.SG bold woman / that.N.SG bold child
- b. *tozi erbap čovek* / *tazi erbap žena* / *tova erbap dete*
that.M.SG skillful person / that.F.SG skillful woman / that.N.SG skillful child
- (78) Ivan {*erbap-at* / *inat-at* / *serbez-at*}
Ivan skillful-DEF / stubborn-DEF / arrogant-DEF
‘Ivan the skillful/stubborn/bold person’

Two of my consultants allow the definite marker to apply to the noun past an intervening adjective, even though this is not generally possible with other adjectives (79)-(80). Steve Franks (p.c.) also reports having talked to a consultant who found such examples possible in certain contexts. Notably, for my consultants, the EI adjective can be modified by an intensifier (79-c)-(79-d), suggesting it is still adjoined phrasally to the *nP*. Two other diagnostics also support a phrasal adjunction analysis of the adjectives: i) they can occur with the comparative marker *po-*, a property of gradable adjectival modifiers (81) and ii) they need not be adjacent to the noun, as shown in (82), where there is an intervening inflected adjective. This disconfirms Halpern’s (1995, 165) speculation that EI examples involve “neologistic compounding”. (Note that these EI adjectives are also permitted not just in attributive position; they can also be predicative (83).)

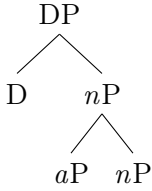
- (79) a. interesn-ij-at čovek / *interesen čovek-at
 interesting-M.SG-DEF person / interesting.M.SG person-DEF
 ‘the interesting person’
- b. serbez [čovek-at / žena-ta / dete-to]
 bold person.M.SG-DEF / woman.F.SG-DEF / child.N.SG-DEF
 ‘the bold/stubborn person/woman/child’
- c. mnogo [inat/erbap] student-at
 very stubborn/skillful student.M.SG-DEF
 ‘the very stubborn/skillful student’
- d. mnogo kofti čovek-at
 very shitty person-DEF
 ‘the very shitty person’
- (80) Erbap žena-ta se obadi.
 skillful woman-DEF CL called
 ‘The skillful woman called.’
- (81) po-{serbez/erbap} čovek
 CMPR-{bold/skillful} person
 ‘a bolder/more skillful person’
- (82) ?erbap bālgarsk-o dete
 stubborn Bulgarian-N.SG child
 ‘a stubborn Bulgarian child’
- (83) Čovek-at e serbez/erbap/kofti.
 person-DEF is bold/skillful/shitty
 ‘The person is bold/skillful/shitty.’

The evidence is thus consistent with EI elements being adjective or adjective-like modifiers.

Analyzing Bulgarian exceptions and rethinking the movement operation

In analyzing the defective patterns of these EI adjectives, I capitalize on the intuition that when definiteness marking targets an adjective, the marking ‘applies’ to *aInfl* in some sense (cf. Harizanov 2018, 296-297).²⁷ While I assume the postsyntactic movement of D is triggered by * adjacency, I reformulate the choice of target of affixation.

As stated elsewhere in the dissertation (e.g. Section 1.1.1), I assume adnominal adjectives are adjoined to *nP*; NumP is omitted in (84-a) for simplicity. For the node-sprouting on *a*, I propose *aInfl* elaborates MWd *a* (84-b).

- (84) a. 
- b. For MWd *a*, perform $R(\text{SPROUT})$
- $R(\text{SPROUT}): a \rightarrow [[a] a\text{Infl}]_a$

Definiteness marking occurs exterior to agreement marking (e.g. *interesn-a-ta* ‘interesting-F.SG-DEF’), which suggests node-sprouting occurs prior to movement of D to the adjective. This is consistent with the hypothesis from Section 1.3, which states that node-sprouting should occur prior to linearly defined operations that affect MWds.

- (85) **Node-Sprouting Ordering Hypothesis:** All MWd node-sprouting precedes all linearly defined MWd postsyntactic displacement.

²⁷One question is whether cardinal numerals, which can take the definite suffix, challenge this generalization. I would suggest that it does not. While it is true that the vast majority of numerals are formally invariant, this is also true of plural inflection in the language generally. For example, recall that plural adjectival agreement neutralizes gender distinctions (as in (71)); this means that plural inflection is in indeed invariant in some sense. (For concreteness, we could take this neutralization to be derived through the impoverishment of gender features in the context of a plural feature.) If cardinal numerals higher than one are plural, then invariance can be attributed to the same impoverishment rule applying to an agreement node sprouted from the cardinal (though the number ‘two’ would be an exception). The sole exponent for this agreement node could then be $-\emptyset$.

An alternative possibility is that D is attracted not to inflectional nodes, but rather, to elements bearing nominal features, in which case, numerals may bear number features inherently (cf. Ionin and Matushansky 2018). This could be linked with definite suffixation on nouns, depending on one’s assumptions about the source of e.g. number marking on nominal heads. I leave this issue to further research.

For the exceptionally inflectionless adjectives, I propose that the node-sprouting rule is specified for a null change for adjectival heads that bear the diacritic feature $[\alpha]$, which are selected for by certain loanword roots.

- (86) For MWd a , perform $R(\text{SPROUT})$
 $R(\text{SPROUT})$: If a bears $[\alpha]$, no change.
 ELSE: $a \rightarrow [[a] a\text{Infl}]_a$

The question is then how inflectionlessness interacts with definiteness suffixation. In the formulation above, repeated in (87) – in which D suffixes to any head X that it is * adjacent to – we might expect that D adjoins to the EI element, but this is not what happens. As discussed above, speakers either have no option, or they suffix the definite marker to the noun (past the intervening EI adjective).

- (87) (provisional) For $D[\text{DEF}]$, perform $R * [\text{XP} \dots]$
 R : D moves to a head X for $D * [\text{XP} \dots]$

D appears to be sensitive to the inflectional status of the adjective, though the sensitivity plays different roles in different grammars.

For speakers that do not allow definiteness marking anywhere, I propose that they are subject to a derivational trapping scenario, in which movement of D is triggered, but it essentially cannot go where it expects to. While adjunction to X should not be an issue itself, I propose that re-linearizing is done with respect to $a\text{Infl}$. In the absence of $a\text{Infl}$, the conditions on operands are not satisfied. Consequently, the derivation crashes.

- (88) For $D[\text{DEF}] * [\text{XP} \dots]$, perform $R(\text{DEF})$
 $R(\text{DEF})$: Adjoin D to the head X. If X is a , relinearize such that $[\dots a\text{Infl}] * D$

The rule in (88) is operative for speakers who have no option for suffixing the definite in the context of an attributive EI adjective. For an ordinary, inflected adjective, $R(\text{DEF})$ is

triggered, and thus, the definite suffix will apply to the adjective (89-a). For EI adjectives, an indefinite expression with an attributive EI will not trigger $R(\text{DEF})$, and the output will be like (89-b).

- (89) a. interesn-o-to dete
 interesting-N.SG-DEF child
 ‘the interesting child’
- b. erbap dete
 skillful child
 ‘a skillful child’

However, when D bears [DEF] and the attributive adjective is exceptionally uninflected, issues arise in the derivation. $R(\text{DEF})$ is triggered, and because these exceptional elements are indeed adjectives (recall the evidence from intensification and comparatives from the previous section), the conditions on triggers for R are satisfied. However, there is no $a\text{Infl}$ – the defining feature of EI adjectives – and thus, the conditions on operands are not satisfied. Consequently, the derivation crashes. For these speakers, $a\text{Infl}$ cannot be ‘skipped’; it adjoins to X and is then stuck there. There is therefore no output with a definite suffix on either the adjective or the noun.

- (90) *erbap-at čovek / *erbap čovek-at
 skillful-DEF person / skillful person-DEF
 ‘skillful person’

For speakers who allow EI adjectives to be skipped, it seems like $a\text{Infl}$ is included in its search for something to which it can affix. The procedure can be stated informally as in (91). The result of this procedure will be that an EI adjective is skipped (92).

- (91) To identify the target of D affixation, scan from left to right. For the first head a such that $a\text{Infl}\#]$, adjoin to it. If there is none, adjoin to the noun.

- (92) *erbap-at čovek / ✓(mnogo) erbap čovek-at
 skillful-DEF person / very skillful person-DEF
 ‘(very) skillful person’

Before furnishing an account of what the mechanics of (91) would have to look like, I demonstrate what this type of procedure captures. If the target is another adjective rather

than the EI adjective, then the result should be felicitous, all else being equal. This is borne out, as is evident from adjectival stacking (93-a) as well as from coordination, in which only the first conjunct is marked (93-b).

- (93) a. glupav-ij-at kofti čovek
 stupid-M.SG-DEF shitty person
 ‘the stupid, shitty person’
- b. interesn-ij-at i serbez čovek
 interesting-M.SG-DEF and bold person
 ‘the interesting and bold person’

In these cases the EI adjective is not considered by the process at all. In the reverse order of the conjuncts, however, (91) is stated such that an uninflected adjective is ignored by the procedure – but another adjective should still be available for affixation. The prediction is that the definite suffix should skip over the EI adjective to be placed on the second conjunct, in contrast with inflected adjectives, which cannot be skipped. This is borne out:

- (94) *interesn i glupav-i-jat čovek
 interesting and stupid-M.SG-DEF person
 ‘the interesting and stupid person’
- (95) ?inat i glupav-i-jat čovek
 stubborn and stupid-M.SG-DEF person
 ‘the stubborn and stupid person’

This is also true for adjectival stacking: when the first adjective is inflectionless, then the operation ‘skips’ over it to appear on the second adjective.

- (96) ?inat bālgarsk-o-to dete
 stubborn Bulgarian-N.SG-DEF child
 ‘the stubborn, Bulgarian child’

That the procedure in (91) accurately captures data like (95) is problematic for an analysis in which adjacency constrains local interaction between D and other elements. The

most restrictive version that I can offer of (91) is in:²⁸

(97) For D[DEF] * [XP], perform *R*

R: D scans from left to right (via * statements) and adjoins to the first *x* to which *xInfl* is adjoined. Otherwise, it adjoins to *n*.

This is different from the typical formulation of the target of D movement in Bulgarian (see Franks 2001; Embick and Noyer 2001; Dost and Gribanova 2006; Arregi and Nevins 2013; Harizanov 2018). Nevertheless, it appears to be warranted by the evidence from inflectionless adjectives.

The question arises as to why inflection should play any role in the process at all. My suggestion is that it is because inflection actually applies to a heterogenous group of elements, which includes adjectives, but also other elements that are plausibly analyzed as non-adjectival, including possessive pronouns, such as *mòj-a-ta* ‘my-FEM-DEF’; some quantifiers, such as *mnogo-to* ‘many-DEF’, among others. If these elements are syntactically and categorially distinct, but have in common that they are inflected, then a learner may infer that inflectionfulness is the relevant property for receiving definiteness marking.

To summarize so far, we have seen that definite suffixation in Bulgarian treats EI adjectives as adjectives. For some speakers, a derivational trapping situation arises because the definite suffix ‘tries’ to adjoin to the EI adjective but cannot execute every step. For other speakers, the rule for suffixation is formulated such that EI adjectives are transparent for the process.²⁹

²⁸While I have assumed adjunction of *aInfl* to a head *a* is projected as *a*, it may in this case be a superior option to project *aInfl*. This would mitigate the awkwardness of the choice of target as it is laid out in (97).

²⁹These speaker differences are reminiscent of what has been reported in the literature regarding Macedonian definite suffixation. Sadock (1991) reports that, like Bulgarian definite suffixes, the Macedonian definite marker suffixes to a noun in the absence of other prenominal material; if there are prenominal adjectives, the definite marker applies only to the first one.

- | | | | | |
|-----|----|------------------------------------|----|--|
| (i) | a. | zab-ot
tooth-DEF
‘the tooth’ | b. | dobr-iot mal čovek
good-DEF little man
‘the good little man’ |
|-----|----|------------------------------------|----|--|

(Sadock, 1991, 117-118)

In the next subsection, I show how EI adjectives *can* in fact receive definite marking in a specific circumstance, which illustrates how information about exceptionality may become opaque.

When definite suffixes appear

One striking fact not discussed in the theoretical literature is that, while the EI elements cannot take the definite marker as an adjective, they can take it when they exhibit nominal-like properties. In their nominal use, these nouns generally refer to people who have the property denoted by the corresponding adjectival use. The nouns generally do not refer to the abstract property itself, though *inat* is an exception in this respect.³⁰

- (98) *inat-at* ‘the stubbornness’
ekstra-ta ‘the extra’ (Nicolova, 2017, 178)

Unlike Bulgarian, Saddock reports that the definite suffix is blocked when the first element is something that cannot take agreement morphology, such as an intensifier. In this case, it is not possible to put the definite marker on the intensifier or the adjective it modifies.

- (ii) a. *mnogu-ot/ta/to/te golem čovek c. onoj mnogu golem čovek
 very-DEF big man that very big man
 b. *mnogu golemi-ot čovek
 very big.AGR-DEF man

(Sadock, 1991, 119-120)

Embick and Noyer (1999) suggest that Macedonian D movement occurs under MWd concatenation, with the target specified as something inflected. Adverbs therefore block D affixation to an adjective, unlike Bulgarian D movement. However, Halpern (1995) reports that some speakers of Macedonian do allow affixation past an intervening adjective:

- (iii) %*mnogu golemi-ot čovek
 very big.AGR-DEF man
 ‘the very big man’ (Halpern, 1995, 164)

There is thus other evidence for microvariation in speakers’ analysis of definite suffixation in these South Slavic languages.

³⁰Not all of the EI adjectives have corresponding standalone nominal uses. For example, *chic* ‘chic’ and *sert* ‘assertive’ are both infelicitous.

- (99) a. Inat-at (vleze v stajata.)
stubborn-DEF (came into room.DEF
‘The stubborn person (came into the room.)’
- b. Serbez-at (vleze v stajata.)
brash-DEF came into room.DEF
‘The brash person (came into the room.)’

My consultants report that examples like (99) sound more natural with a name followed by an appositive, such as *Elena inat-at* ‘Elena stubborn-DEF’.³¹ This use is also reported by Krūsteva (2009, 80). Nevertheless, some of my consultants find (99) grammatical, as well.

For cases like (98), I propose that the root $\sqrt{\text{INAT}}$ is directly merged with a categorizing head n to form the complex $[\sqrt{\text{INAT}} n]_n$, and that definiteness suffixation applies unimpeded. Because suffixation to n does *not* refer to inflectional properties, the result is grammatical with affixation.³² The operation in (97) does not refer to the inflectional status of nouns, and consequently, the definite marker is insensitive to the exceptionality of the corresponding adjective.

Because the appositive (or ‘appellative’) use appears in sources and is acceptable to all of my consultants, I will focus on it here.³³ Despite appearances, these EI elements still retain adjectival properties: they can be intensified and put into comparatives (100). This use corresponds to what is referred to as an ‘empty noun’ use (on which, see Saab 2019 and references therein). I adopt Sleeman’s (2017) structure of Dutch empty nouns for Bulgarian: empty nouns have mixed nominal structure, as in (101), with the adjectival structure ‘housed’ within the nominal structure; the n in the structure is realized as null. I assume this nominal structure belongs to an appositive DP that adjoins to the proper name.³⁴ Because the aP is a complement to $n[+\text{HUMAN}]$, the movement operation targets

³¹Nicolova (2017, 185) notes that postnominally modified names in which the adjective bears the definite suffix work as nicknames or appellations.

³²Note that these definite-suffixed forms also indicate that there is nothing phonotactically ill-formed about EI adjectives with definite markers.

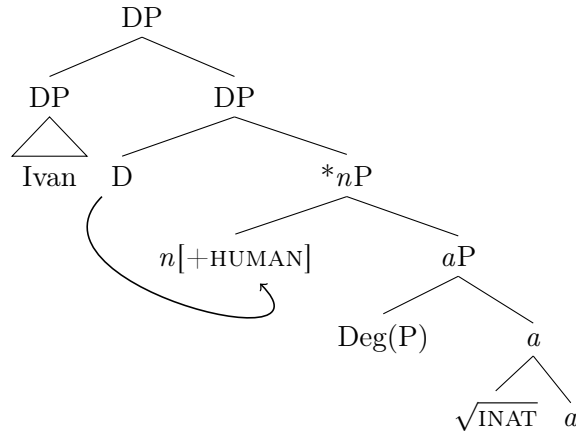
³³While my consultants all find these expressions acceptable, the use of some EI adjectives is not always sanctioned across speakers. For example, no one seems to accept *Ivan sexy-at* ‘Ivan the sexy’, and there is variation with respect to *Ivan kofti-at* ‘Ivan the shitty’.

³⁴Names in which the postnominal adjective bears the definite suffix are appropriate only as nicknames; titles such as *Simeon Veliki* ‘Simeon the Great’ do not employ any definiteness marking (Nicolova, 2017, 185).

the head of *nP* for adjunction; thus the exceptionality of the adjective is not visible, and the result is definiteness affixation.³⁵

- (100) Ivan ({mnogo/po-}) inat-at
 Ivan very/CMPR- stubborn-DEF
 ‘Ivan the (very/more) stubborn’

(101)



A related analysis of stranded marking is pursued by Saab and Lipták 2016 for noun phrase ellipsis in agglutinative languages. For example, in Hungarian, plural marking occurs on nouns and not attributive adjectives when the noun is overt (102). However, when the noun phrase is elided, plural marking surfaces on the prenominal adjective (103).

- (102) a. az új(*-ak) ház-ak
 the new-PL house-PL
 b. *az új-ak ház
 the new-PL house
 ‘the new houses’

(Saab and Lipták, 2016, 83)

- (103) Mari a régi kis ház-ak-at látta. Én az új-[_]*(-ak-at)
 Mary the old all house-PL-ACC saw I the new-PL-ACC
 ‘Mary saw the old small houses. I saw the new (small) ones.’

(Saab and Lipták, 2016, 84)

Saab and Lipták analyze the plural morpheme as a Num head, which lowers onto the nom-

³⁵I set aside the nontrivial issue of morpheme order.

inalizing head n in the typical case (102), but when stranded due to ellipsis, docks onto a neighboring adjective through Local Dislocation (Embick and Noyer, 2001).

Their account does not straightforwardly extend to the Bulgarian facts. If D were stranded in the context of the empty noun, we might expect a subsequent movement operation to displace it. However, a local dislocation analysis would predict that any MWd adjacent to D should accept the definite marking. But this does not happen; the intensifier *mnogo* is still skipped:

- | | | | | |
|-------|----|---|----|---|
| (104) | a. | Ivan mnogo inat-at
Ivan very stubborn-DEF
'Ivan the very/more stubborn' | b. | *Ivan mnogo-to inat
Ivan very-DEF stubborn
'Ivan the very stubborn' |
|-------|----|---|----|---|

Under the current account, the $n[+HUMAN]$ in Bulgarian is not elided, but rather, it comes to be pronounced as zero.

Concluding Remarks on Bulgarian

In this section, I showed how the basic patterns of definiteness marking in Bulgarian can be captured under an account in which the target of postsyntactic movement of D is to the head of a *-adjacent XP. I then discussed how EI adjectives interact with this operation to produce either i) a derivational trap, yielding ungrammaticality or ii) a transparency which indicates a more complex postsyntactic operation.

If the modular view of grammar advanced here is correct, and inflectionlessness in Bulgarian is represented morphologically as I have demonstrated, the transparency effect is incompatible with a syntactic movement account using e.g. syntactic head movement, which could not be sensitive to the form of the adjective.

2.3.4 BCS case and inflectionlessness

This subsection explores a phenomenon in Bosnian-Croatian-Serbian (BCS) whereby inflectionless nouns cannot appear on their own in certain case configurations (Wechsler and

Zlatic 2003; Bošković 2006; among others).³⁶ I offer an analysis in terms of derivational trapping similar to that of EI elements in German NPE (Section 3.4).

In Bosnian-Croatian-Serbian (BCS), inflectionless nouns appear to be syntactically restricted in a striking way. BCS nouns generally inflect for gender, number, and case. However, some nouns lack morphological alternations entirely, having instead one single, ‘frozen’ form. The contrast in declinability is illustrated by Bošković (2006) for the name *Nada*, which exhibits case alternations, and *Meri*, which does not (105).

(105)

	<i>Nada</i>	<i>Meri</i>
NOM	Nad-a	Meri
ACC	Nad-u	
GEN	Nad-e	
DAT/LOC	Nad-i	
INSTR	Nad-om	
VOC	Nad-o	

(adapted, Bošković 2006, 528)

According to Wechsler and Zlatic (2003) and Bošković (2006, 2009), indeclinable nouns in BCS are subject to a set of morphosyntactic restrictions. While they can appear in structural case positions (106), they cannot appear on their own as the object of a verb that assigns quirky case to its object (107-b)-(108). Moreover, exceptionally inflectionless nouns cannot appear as a passive *by*-phrase agent, which in BCS is marked with instrumental case (109).³⁷

(106) a. On je kupio kuću i kola
 he is bought house.ACC and car.ACC
 ‘He bought a house and a car.’

b. Uzgajač konja je kupio **Meri**
 breeder horse is bought Meri.ACC
 ‘The horse breeder bought Meri.’

(Bošković, 2006, 527-528)

³⁶I would like to thank Milena Šereikaitė (p.c.) for discussion of related issues in Lithuanian.

³⁷The quirky case assigned by the verb is indicated in the subscript text next to the verb in the gloss.

- (107) a. On je ovladao zemljom
 he is conquered_{INSTR} country.INSTR
 ‘He conquered that country.’ (Bošković, 2006, 525)
- b. *Džokej je ovladao Meri
 jockey is conquered_{INSTR} Meri
 ‘The jockey conquered Meri.’ (Bošković, 2006, 528)
- (108) a. Divim se Laris-i / *Miki
 admire.1.SG_{DAT} REFL Larisa / Miki
 ‘I admire Larisa / Miki.’
- b. Ponosim se Laris-om / *Miki
 be.proud.1.SG_{INSTR} REFL Larisa-INSTR / Miki
 ‘I am proud of Larisa / Miki.’ (Pesetsky, 2013, 130)
- (109) Oduševljena sam Laris-om / *Miki
 impressed.F.SG AUX.1.SG Larisa-INST / Miki
 ‘I am impressed by Larisa / Miki.’ (Pesetsky, 2013, 130)

EI nouns are not banned altogether from being the objects of quirky-case assigning verbs or from being passive agents, as illustrated by three types of evidence. First, as Wechsler and Zlatić (2003) and Bošković (2006) note, it is possible to ‘rescue’ examples like (107-b) by adding an agreeing possessor or attributive adjective, as in (110). If an attributive adjective modifying an EI noun is itself indeclinable (111), then the expression remains ungrammatical (Wechsler and Zlatić 2003; Pesetsky 2013, 131).

- (110) a. Džokej je pokušao ovladati. našom/neukrotivom Meri
 jockey is tried conquer.INF our.INSTR.SG/untamable.INSTR.SG Meri
 ‘The jockey wanted to conquer our/untamable Meri.’ (Bošković, 2006, 529)
- b. Divim se *(moj-oj) Miki.
 admire.1.SG_{DAT} REFL my-DAT.F.SG Miki
 ‘I admire Larisa / Miki.’ (Pesetsky, 2013, 131)
- c. Oduševljena sam *(moj-om) Miki
 impressed.F.SG AUX.1.SG my-INSTR.F.SG Miki
 ‘I am impressed by my Miki.’ (Pesetsky, 2013, 130)
- (111) Divim se {*šik / ✓lep-oj} Miki.
 admire.1.SG_{DAT} REFL {chic / beautiful-DAT.F.SG Miki
 ‘I admire chic/beautiful Miki.’ (Pesetsky, 2013, 131)

Second, if the inflectionless noun is the second conjunct in a coordinated nominal expression in which an inflected noun is first, then the result is better formed (Bošković, 2006); the opposite conjunct order remains unacceptable.

- (112) a. ?Džokej je ovladao_{INSTR} Kraljicom i Meri.
 jockey is conquered Queen.INSTR and Meri
 ‘The jockey conquered Queen and Meri.’
- b. *Džokej je ovladao_{INSTR} Meri i Kraljicom.
 jockey is conquered Meri and Queen.INSTR
 ‘The jockey conquered Meri and Queen.’ (Bošković, 2006, 529)

Lastly, an alternative strategy is also available, where the preposition *s(a)* ‘with’ occurs with a quirky case-assigning verb (113). This option is also possible when the inflectionless noun occurs as a first conjunct.³⁸

- (113) a. Džokej je ovladao s(a) Meri.
 jockey is conquered_{INSTR} with Meri
 ‘The jockey conquered Meri.’
- b. ?Džokej je ovladao s(a) Meri i Kraljicom.
 jockey is conquered with Meri and Queen.INSTR
 ‘The jockey conquered Meri and Queen.’ (Bošković, 2006, 529)

Importantly, it is not the case that EI nouns altogether lack the ability to appear in environments where they would be assigned dative, instrumental, or locative case. EI nouns are acceptable as complements of overt prepositions that assign these cases (Wechsler and Zlatić 2003, Pesetsky 2013, 130).

- (114) a. On je trcao prema (lep-oj) Miki.
 He AUX.3.sg ran toward (beautiful-DAT.F.SG) Miki.
 ‘He ran toward (beautiful) Miki.’
- b. Dolazim sa (moj-om) Miki.
 Come.1.SG with (my-INSTR.SG) Miki
 ‘I am coming with (my) Miki.’

³⁸It is not clear to me whether this strategy is available for the agents of passives.

- c. Razgovarali smo o (moj-oj) Miki.
 talk.PST.PL AUX.1.PL about (my-LOC.F.SG) Miki
 ‘We talked about (my) Miki.’ (Pesetsky, 2013, 130)

Bošković’s account links the behavior of the indeclinable nouns in these environments to the behavior of genitive of quantification. BCS numerals 5 and higher require the nouns they combine with to appear in genitive case. However, higher-numeral nominals are like indeclinable nouns in that they cannot be the object of a verb that assigns quirky case to its object. This is seen in the contrast between a lower-numeral noun, which takes the case assigned by its verb (115-a), and a higher-numeral noun, which cannot appear in either genitive (identified with the numeral) or the quirky case assigned by the verb. As with indeclinable names, there is a ‘repair’ in which the quirky-case verb occurs with a preposition *s(a)*.

- (115) a. On je ovladao jednom zemljom.
 He is conquered_{INSTR} one.INSTR country.INSTR
 ‘He conquered one country.’
- b. *On je ovladao pet zemalja / pet zemljama.
 He is conquered five countries.GEN.PL / five countries.INSTR.PL
 ‘He conquered five countries.’
- c. On je ovladao s(a) pet zemalja.
 He is conquered with five countries.GEN.PL
 ‘He conquered five countries.’ (Bošković, 2006, 524-525)

The empirical generalization is that ‘oblique’ cases are morphologically realized at least once, if overt prepositions count as morphological realizations of case (cf. Bošković 2006; Pesetsky 2013). Bošković (2006, 2009) appeals to θ -marking (in the sense of Chomsky 1986) to explain the syntactic defectivity of these nominals. According to Bošković, indeclinable nouns do not inflect for case because they do not have case features in the syntax. They therefore cannot meet the conditions of quirky-case verbs, which require case-checking of their objects in conjunction with their θ -role assignment. The ‘repair’ strategy in (110) is thus available because the adjective can (directly) participate in case-checking with the verb. In (113), the verb is able to check its case against the preposition *s(a)* (which takes instru-

mental objects). This case-checking condition would have to apply more generally to prepositions, which would have to check their case requirements against themselves. θ -marking, however, seems like an implausible connection, given that the particular quirky-assigning verbs appear to be assigning arbitrary *lexical* cases to their themes rather than inherent cases associated with other thematic roles (see e.g. Woolford 2006 on the distinction).³⁹

The intuition seems to be that inflectionlessness of an element in BCS means that it does not serve as a proper ‘vessel’ for case. However, any analysis should also handle the fact that the ungrammaticality that arises in BCS is not inevitable. Russian also has elements that inflect for case, as well as quirky-case assigning verbs, but does not display the same pattern of syntactic defectivity (cf. Pesetsky 2013). Rather, EI nouns are acceptable as objects to quirky-case assigning verbs:

- (116) a. Masha podrazhaeta Jimmy
 Masha.NOM imitate_{DAT} Jimmy
 ‘Masha is imitating Jimmy.’
- b. Žokej ovladel Jimmy
 jockey.NOM conquer_{INSTR} Jimmy
 ‘The jockey is conquering Jimmy.’ Russian (Nikita Bezrukov, p.c.)

I propose that inflectionless adjectives and nouns in BCS are exceptions that delete inflectional nodes after sprouting. However, a principle is still operative that says that MWd *a* and *n* bear inflection. I propose that, in order to conform to this principle, an inflectionless element can establish a local relation with a neighboring inflected element. When it cannot, the derivation crashes. (See Section 2.4.2 for more evidence from BCS that this analysis is on the right track. See also Chapter 3 for a related analysis along these lines.)

The local relation does not result in actual compounding of two elements; the parasitic relation is thus established only abstractly, as a type of licensing. This relation has the effect that the MWd *n* is considered part of the same ‘group’ for the purposes of satisfying the desideratum that *n* is inflected. Mechanically, the simplest theory says that MWd adjacency

³⁹Wechsler and Zlatić (2003) and Pesetsky (2013, 130) recast the empirical generalization in terms of a constraint that demands expression of certain case features.

is sufficient for establishing this type of relation. I adopt this view. The rule can be stated quasi-informally as follows:

- (117) When $n\text{Infl}$ is deleted, perform R
 R : $x \frown n$ becomes $x \triangleleft n$, x bearing nominal features

This operation would be too general, in that it does not account for the ability of nominative and accusative EI nouns to appear on their own without neighboring elements with which they can establish a parasitic relationship.

- (118) a. (Ova) Miji je došla iz Amerike.
 (this.NOM.F.SG) Miki AUX.SG came.F.SG from America
 ‘(This) Miki came from America.’
 b. Poznajem (jednu) Miki.
 know.1.SG one.ACC.SG Miki
 ‘I know (one person named) Miki.’ (Wechsler and Zlatić, 2003, 131)

I propose these ‘light’ cases do not trigger the parasitic operation. Assuming feature containment relations hold between all of the cases (see e.g. Caha 2009; Smith et al. 2018), we can say that the operation is not triggered for nouns unless they bear a case feature ‘higher’ than ACC.

This framing is distinct from other accounts in the locus of ungrammaticality, which is the inflectionless element rather than the case-assigning element (cf. Bošković 2006; Pesetsky 2013; Murphy 2019); crucially, it relies on the concept of morphological well-formedness rather than something derivationally deeper such as θ -role assignment (as in the account from Bošković 2006). Rather, everything is required and performed at a derivationally ‘superficial’ level.

To illustrate how this type of account would work, consider prepositions, to which EI elements can be parasitic (assuming prepositions bear case features; cf. Pesetsky 2013).⁴⁰

⁴⁰I adopt Bošković’s proposal that the preposition can check case on the verb; however, I assume that it is a LIST 1 object. While it could be merged with ordinary, inflected nominals in the context of quirky-case arguments, given that it would be unnecessary to do so, I assume an economy principle rules this out.

- (119) a. On je trcao prema (lep-oj) Miki.
 He AUX.3.sg ran toward (beautiful-DAT.F.SG) Miki.
 ‘He ran toward (beautiful) Miki.’
- b. Džokej je ovladao s(a) Meri.
 jockey is conquered_{INSTR} with Meri
 ‘The jockey conquered Meri.’

The node-sprouting rule treats *Meri* and *Miki* as exceptions. At the point of MWd concatenation between these EI nouns and the prepositions, the nouns become parasitic (denoted by ▷) on the preposition.

$$(120) \quad P[\text{INSTR}] \frown n \rightarrow P[\text{INSTR}] \triangleleft n$$

When there is no preposition and it is instead just a quirky case-assigning verb, then a \triangleleft relation cannot be established, and the derivation crashes. The same applies when the neighboring element is an indeclinable adjective, as in the case of (121). However, because the operation can target adjacent, inflected adjectives, a modified indeclinable noun with an inflected attributive adjective is indeed grammatical in these circumstances.

- (121) Divim se {*šik / ✓lep-oj} Miki.
 admire.1.SG_{DAT} REFL {chic / beautiful-DAT.F.SG Miki
 ‘I admire chic/beautiful Miki.’ (Pesetsky, 2013, 131)

Converging evidence for this type of approach comes from the phenomenon of Left Branch Extraction (LBE) in BCS, which is discussed in Section 2.4.2. The same type of parasitic relation is established by adjectives, which fail to extract, by hypothesis because they cannot form a parasitic relation with an adjacent element. See Section 2.4.2 for specific implementation for adjectives and LBE.

- (122) a. Smedja_i je on kupio t_i kola.
 brown.AGR is he bought car
 b. *Braon/bež_i je on kupio t_i kola.
 brown/beige is he bought car
 ‘He bought a brown/beige car.’ (Bošković, 2013)

Recall that Russian does not behave the same way with respect to case and indeclinable nouns (123). The explanation I would like to advance is that Russian EI elements do not trigger the same parasitic operation; instead, these EI elements accept being alone. This is confirmed by their LBE behavior, which diverges from that of BCS in that it is acceptable (124) (this is discussed more in 2.4.2).

- (123) \check{Z} okej ovladel Jimmy.
jockey.NOM conquer_{INSTR} Jimmy
‘The jockey is conquering Jimmy.’ (Russian)
- (124) Kripi ona privela [t chuvaka].
creepy she brought.3.F.SG [guy]
‘What a creepy guy she brought over.’ (Russian)

To summarize this section, indeclinable nouns in BCS are defective in that they cannot appear in certain case configurations. The tentative proposal here is that these EI nouns, upon deleting their agreement morpheme, trigger an operation which causes the noun to attempt to establish a parasitic relation with a nearby element bearing nominal features. If there is no neighboring preposition or adjective, the derivation crashes. This account based on parasitism is also explored for German in Section 3.4; see also Section 2.4.2 on the inability for inflectionless adjectives in BCS to undergo Left Branch Extraction.

2.3.5 Summary

This section examined the effect of the exceptional absence of inflection on other postsyntactic processes. The effect that inflectionlessness has in these languages supports the view that the absence of inflection can be encoded by postsyntactic processes that occur earlier in the derivation, which would not be the case if the inflectionlessness stemmed from late processes such as Vocabulary Insertion or morphophonological rules. The case studies also provide evidence for derivational trapping in the postsyntax. The table in (27), repeated from above, summarizes the case studies and the basic properties at issue.

(125)

Language	Phenomenon	Interaction
Latin	Position of displaced <i>-que</i> 'and'	None
Icelandic	Analytic variant used with inflectionless adjectives	Postsyntactic movement not triggered
Bulgarian	Definiteness marking cannot apply to inflectionless adjectives	Postsyntactic movement results in i) derivational trap because of postsyntactic movement; ii) skipping apparent intervener
BCS	Case with inflectionless nouns	Derivational trap due to EI par- asitism

In clarifying the representation of the absence of inflection, arguments were made and evidence was offered for some of the case studies regarding i) the formulation of operations, including locally defined postsyntactic movements and ii) the status of inflectionless elements as e.g. adjectives that head *a*Ps. The studies here therefore contribute to the discussion of these phenomena generally, not just as they pertain to inflectionlessness.

While the absence of inflection is hypothesized to be able to affect postsyntactic processes, the theory of modular separation between syntax and postsyntax predicts that syntactic movement should be unaffected by (postsyntactically represented) exceptional inflectionlessness. The next subsection addresses potential challenges to this prediction.

2.4 On Inflectionlessness and Syntax

While the previous subsection identifies the effect of the exceptional absence of inflection on postsyntactic processes, this section addresses the predicted non-existence of effects of exceptional inflectionlessness on the narrow syntax.

I first briefly address the issue of syntactic head movement in 2.4.1; I then move on to

two other case studies which appear to implicate phrasal movement. Section 2.4.2 compares the behavior of exceptionally inflectionless elements for Left Branch Extraction: in BCS, it is prohibited, but in Russian, it is not. I offer novel empirical evidence and a derivational trapping analysis for BCS that is related to the analysis of BCS from Section 2.3.4. Section 2.4.3 examines a case in Italian in which exceptionally inflectionless adjectives are prohibited from being prenominal attributive adjectives. I present data suggesting this is not entirely true, and offer a sketch of a possible analysis that would dismiss the threat that the phenomenon poses to the modularity hypothesis.

2.4.1 Head movement, inflectionlessness, and the mystery of verbs

While Section 2.3 examined the effect of the absence of inflection on postsyntactic head movement, more canonical instances of *syntactic* head movement have not been addressed. The status of head movement remains a matter of debate, and the question of whether it is fundamentally syntactic, morphological, or a combination thereof, remains open (see e.g. Embick and Noyer 2001; Matushansky 2006; Harizanov and Gribanova 2018, among many others). Regardless of the exact status of head movement, we may ask how more canonical instances such as V-T or V-C behave with EI elements. If such movement is indeed syntactic, the prediction of this account is that this movement cannot be disrupted (or triggered) specifically by inflectionlessness.

Unfortunately, this prediction appears to be difficult to test, the reason being that the likeliest source of EI verbs – verbal borrowings – are unlike adjectival borrowings in that, to my knowledge, they are always inflected like other verbs in the language (see e.g. Wohlgemuth 2009). Why this should be the case is an interesting question to which I have no definitive answer. As suggested in Section 1.3, agreement morphology in the verbal domain seems to behave differently from agreement morphology on lexical categories like *a* and *n*.⁴¹ It could be that agreement with T does not involve a node-sprouting operation and therefore cannot countenance exceptions in the same way as adjective agreement can. I leave this as

⁴¹See also the work of Norris 2012, 2014, who distinguishes between nominal concord and argument-predicate agreement.

conjecture.⁴²

If there is no such thing as an EI verb, we cannot test what would happen for V-T or V-C movement. The circumstance closest to the one we would want to test comes from English, which, as is well-known, lacks inflection on modals. This is evident from its third-person singular forms; whereas finite present indicative verbs in English are always inflected with *-s* in 3.SG (*he/she/it stand-s*), modals never are (*she can(*-s)/must(*-s)/may(*-s)*). This lack of inflection has no effect on movement to C; inflected auxiliaries (*do, be, have*) and uninflected modals both move to C. While this circumstance is distinct from one involving truly EI elements of the same category, it does reflect an insensitivity to inflectional status in head movement. Thus our generalization is maintained.

- (126) a. Why should Mary stay? b. Why is Mary staying?

In the next two subsections, I discuss cases of movement that pose a more serious threat to the generalization.

2.4.2 Left Branch Extraction in Russian and BCS

Russian and BCS (unlike English) both allow Left Branch Extraction (LBE) out of a nominal (Zlatic 1997; Bošković 2012 and references therein).⁴³

- | | | |
|-------|---|-----------------------|
| (127) | a. Doroguju on videl [<i>t</i> mašinu]
expensive he saw car | (Russian) |
| | b. Skupa je vidio [<i>t</i> kola]
expensive is seen car | (BCS) (Bošković 2012) |

As stated previously, the prediction of the account offered here is that syntactic movement should proceed unimpeded with uninflected elements, if being inflected is a morphological fact. Irrespective of the details of particular analyses, the received view is that LBE involves

⁴²See also Smith 2011 on morphophonological differences between nouns, adjectives, and verbs.

⁴³I would like to thank Nikita Bezrukov (p.c.) for providing Russian judgments and Ivana Jovović (p.c.) for BCS judgments. I am also grateful to both consultants for helpful discussion about the material in this section.

syntactic movement (Franks and Progovac 1994; Fanselow and Ćavar 2002; Bošković 2012, among others). For concreteness, let us assume that the *aP* is what is moved.

If uninflected adjectives are indeed adjectives that head *aPs*, then they are predicted to be licit with LBE. This is borne out for Russian, as is evident from the examples in (128)-(129) using EI adjectives.⁴⁴

- (128) a. Ona privela kripi chuvaka.
 She brought.3.F.SG creepy guy
 ‘She brought a creepy guy over.’
 b. Kripi ona privela [t chuvaka].
 creepy she brought.3.F.SG [guy]
 ‘What a creepy guy she brought over.’ (Russian)
- (129) a. Ona privela seksi druga.
 She brought.3.F.SG sexy friend
 ‘She brought a sexy friend with her.’
 b. Seksi ona privela [t druga].
 sexy she brought.3.F.SG [friend]
 ‘What a sexy friend she brought with her.’ (Russian)

In BCS, however, LBE has been claimed not to be permissible with EI adjectives (Bošković, 2013), contrary to our expectation.⁴⁵ That these adjectives are indeed inflectionless can be seen in (131); adjectives in general inflect for gender, number, and case of a nominal, but the forms of *braon* ‘brown’ and *bež* ‘beige’ are invariant (only shown here for nominative, accusative, and genitive).⁴⁶

- (130) a. Smedja_i je on kupio t_i kola
 Brown.AGR is he bought car
 b. *Braon/bež_i je on kupio t_i kola
 brown/beige is he bought car
 ‘He bought a brown/beige car.’ (Bošković, 2013)

⁴⁴My consultant’s intuition is that *seksi* is generally preferred to describe people rather than objects. I apologize for the awkwardness of the examples.

⁴⁵Zlatić (1997) goes as far to say that agreement with a noun is a precondition on LBE. However, this appears to be false; see below.

⁴⁶My BCS consultant, while agreeing that there is indeed a contrast for the examples in (130), judges the (b) example as ?? . Bošković (2009) also acknowledges in a footnote that the reported degradation from LBE with inflectionless adjectives is not shared by all BCS speakers.

- (131) a. [braon/bež] [džemper / majica / odelo]
 [brown/beige] [sweater.M / shirt.F / suit.N] (NOM.SG)
 ‘a brown sweater/shirt/suit’; ‘a beige sweater/shirt/suit’
- b. [braon/bež] [džemperi / majice / odela]
 [brown/beige] [sweater.M / shirt.F / suit.N] (NOM.PL)
 ‘brown sweaters/shirts/suits’; ‘beige sweaters/shirts/suits’
- c. (Kupila je) [braon/bež] [džemper / majicu / odelo]
 (Bought is) brown/beige [sweater.M / shirt.F / suit.N] (ACC.SG)
 ‘(She bought) a brown sweater/shirt/suit’; ‘(She bought) a beige sweater/
 shirt/suit’
- d. (Kupila je) [braon/bež] [džempere / magice / odela]
 (Bought is) brown/beige [sweater.M / shirt.F / suit.N] (ACC.PL)
 ‘(She bought) brown sweaters/shirts/suits’; ‘(She bought) beige sweaters/
 shirts/suits’
- e. (Plava jakna je ljepša od) [braon/bež] [džempera / majice /
 blue jacket is beautiful.CMPR than brown/beige [sweater.M / shirt.F /
 odela]
 suit.N] (GEN.SG)
 ‘(The blue jacket is more beautiful than) the brown/beige [sweater/shirt/suit].’
- f. (Plava jakna je ljepša od) [braon/bež] [džempera / majica /
 blue jacket is beautiful.CMPR than brown/beige [sweater.M / shirt.F /
 odela]
 suit.N] (GEN.PL)
 ‘(The blue jacket is more beautiful than) the brown/beige [sweater/shirt/suit].’

This difference between Russian and BCS is strikingly parallel to the difference between the two languages with respect to case and indeclinable nouns discussed in Section 2.3.4. Recall that Russian allows EI nouns to be the object of a quirky-case assigning verb while BCS does not (when the EI element occurs without other inflected elements).

- (132) a. On je ovladao zemljom
 he is conquered_{INSTR} country.INSTR
 ‘He conquered that country.’ (BCS, Bošković 2006, 525)
- b. *Džokej je ovladao Meri
 jockey is conquered_{INSTR} Meri
 ‘The jockey conquered Meri.’ (BCS, Bošković 2006, 528)

- (133) a. Masha podrazhaeta Jimmy.
 Masha.NOM imitate_{DAT} Jimmy
 ‘Masha is imitating Jimmy.’
- b. Žokej ovladel Jimmy.
 jockey.NOM conquer_{INSTR} Jimmy
 ‘The jockey is conquering Jimmy.’ (Russian)

The divergence of the two languages for these two separate phenomena provides converging support for an analysis whereby the languages encode aspects of inflectionlessness differently. I take both to derive inflectionlessness through deletion of an inflectional morpheme, but I will propose that this deletion triggers an operation in BCS but not Russian, the details of which I describe below.

Bošković (2013) proposes that the inability of uninflectable adjectives to undergo LBE is due to their incorporation into nouns. This would be consistent with the current assumption that inflecting *a* occurs through MWd node-sprouting, if incorporation is taken to be head adjunction of *a* to *n* (see Section 2.2).

In support of an incorporation analysis, Bošković points out that these adjectives must be adjacent to the noun in cases of prenominal adjective stacking (134), and further, that the adjectives cannot be stranded in an NPE environment (135).

- (134) a. plastična braon/bež kola
 plastic.AGR brown car
- b. *braon/bež plastična kola
 brown/beige plastic.AGR car
- c. smedja plastična kola
 brown.AGR plastic.AGR car
 ‘brown plastic car’ (Bošković, 2013)

- (135) *On nam je pokazao plavu kuću, a ona nam je pokazala bež.
 he us.DAT is shown blue house, and she us.DAT is shown beige
 (Bošković, 2013)

The incorporation analysis, however, faces empirical problems. First, if the inflectionlessness is due to incorporation, we would not expect EI adjectives to be possible in predicative position, contrary to fact (136-a). Second, EI adjectives can be modified by intensifiers

(136-b), which are assumed to be phrasal modifiers. Third, EI adjectives can be coordinated with inflected adjectives (137), which we would not expect if one but not the other was incorporated. Note that these last two diagnostics also support the adjectival status of these EI elements.⁴⁷

- (136) a. Majica je braon/bež.
 shirt is brown/beige
 ‘The shirt is brown/beige.’
- b. [baš braon] majica
 very brown shirt
 ‘a very brown shirt’

- (137) Kupila je jednu braon i bijelu majicu.
 bought is one.ACC brown and white.ACC shirt.ACC
 ‘She bought one shirt that was brown and white.’

Like other adjectives, EI adjectives can form superlative expressions, which are built off of corresponding comparative forms (cf. Bobaljik 2012), though while there is a synthetic superlative form for *smedj* ‘brown’, the indeclinable *braon* ‘brown’ requires an analytic expression.

- (138) a. naj-smedj-iji
 SPRL-brown-CMPR
 ‘most brown’
- b. najviše braon /*naj-braon-iji
 most brown /SPRL-brown-CMPR
 ‘most brown’

On the basis of these diagnostics, I conclude that these EI elements are indeed treated as adjectival modifiers. The EI adjectives in BCS thus present a challenge to the hypothesis explored in this chapter: they behave like other adjectives in the language in various respects,

⁴⁷My Russian-speaking consultant allows intervening adjectives between an EI adjective and the head noun (i) and allows intensifiers, as well (ii), supporting adjectival status of the EI elements in Russian.

- (i) ?On privel kakogoto kripsi starogo chuvaka.
 He brought some.AGR creepy old.AGR guy
 ‘He brought some creepy old guy over.’
- (ii) ochen {seksi / kripsi }
 very sexy / creepy

but are infelicitous in LBE environments.

We might expect that there is a ‘recoverability’ issue stemming from the displacement of an adjective that lacks reinforcing information about the nominal from which it has been extracted. Evidence against this comes from indeclinable numerals. While a couple of the lower numerals decline, higher numerals such as *deset* ‘ten’ do not. However, indeclinable numerals do allow LBE, as evidenced in (139) (see also Bošković 2009).

- (139) a. Vidjela je deset svojih prijateljica
 seen is ten her.ANAPHOR friends
 ‘She saw ten of her friends.’
- b. Deset je vidjela *t* svojih prijateljica
 ten is seen her.ANAPHOR friends
 ‘She saw ten of her friends.’ (adapted from Bošković 2014)

I propose that EI adjectives in BCS are subject to a morphological well-formedness requirement; in response to an adjectival MWd losing its agreement morphology, another operation is triggered that would satisfy the requirement (or desideratum) that adjectives be inflected. This operation causes the adjective to group itself with a neighboring element, with which it establishes a ‘parasitic’ relation. Because the well-formedness requirement applies to MWds, I assume these relations (which I represent with the symbol \triangleright) can be established only under strict MWd concatenation. This type of operation can be stated quasi-formally as in (140) (where x stands for any category).

- (140) When $a\text{Infl}$ is deleted, perform R

R : $a \frown x$ becomes $a \triangleright x$, x an inflected category

EI adjectives are acceptable in ordinary circumstances if they remain in prenominal position because they will be adjacent to n . However, ungrammaticality of LBE arises due to a derivational trap: the adjective ‘expects’ to establish a parasitic relationship with a noun, but when it moves into the higher position, it no longer has the ability to establish any relation with the noun. Because the operation in (140) is triggered but cannot be executed,

the result is a crash.

In addition to the LBE facts, the account also predicts – under certain assumptions about ellipsis – that NPE is ungrammatical with EI adjectives. This is because an elided *n* cannot be targeted by the operation that would produce an \triangleright statement between the inflectionless adjective and another element. More concretely, I adopt Saab and Lipták’s (2016) generalization, which rules out establishing a parasitic relation between the adjective and the elided noun:

(141) *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.

(Saab and Lipták, 2016, 77)

The prediction is borne out; EI adjectives cannot be stranded in NPE environments.⁴⁸

- (142) On nam je pokazao plavu kuću, a ona nam je pokazala bež
*He us.DAT is shown blue house, and she us.DAT is shown beige
(Bošković, 2013)

Further confirmation for the current account comes from an important exception to the LBE prohibition. Strikingly, in cases where a set of coordinated adjectives are extracted, the result is grammatical when an EI adjective occurs with an inflected adjective (143).⁴⁹

⁴⁸Given what has been said about Russian, we expect NPE to be grammatical with exceptionally inflectionless adjectives. However, this is not borne out:

- (i) Ya znayuumnogo lingvista... ‘I know a smart.ACC linguist’
a. no ne znayu krasivogo
but not know cute.ACC
...‘But I don’t know a cute one.’
b. *no ne znayu seksi
but not know sexy.ACC
...‘But I don’t know a sexy one.’ (Russian)

I leave this to future research.

⁴⁹Unexpectedly, my consultant also accepts LBE when both adjectives are uninflected:

- (143) [braon i bijelu] je kupio [t majicu]
 brown and white.ACC is bought [t shirt.ACC]
 ‘She bought a brown and white shirt.’

For this type of case, the EI adjective is able to establish a parasitic relation with its accompanying adjective, and consequently LBE is grammatical. (For this to be performed under strict MWd adjacency, we would have to stipulate that the coordinator *i* belongs to an adjacent MWd.)

In this subsection, I presented a potential challenge to the view that inflectionlessness is a morphological phenomenon that cannot influence or disrupt syntax. I presented an analysis of the BCS facts in terms of derivational trapping in the postsyntax: moved adjectives are no longer able to exploit adjacent nouns to satisfy the requirement that adjectives be inflected. (See Section 2.3 on BCS and Section 3.2 on German for other analyses along these same lines.)

2.4.3 Italian EI adjectives

Another potential counterexample to the claim that inflectionlessness is irrelevant to syntax comes from Standard Italian. Adjectives in Italian are typically inflected for gender and number (144), though there are some exceptions, the most well-known of which are perhaps color adjectives (145); there are also other loanwords such as *gratis* ‘free’ and *chic* ‘chic’ that are also EI.

- (144) a. la bandiera ross-a/giall-a/ner-a
 the.F.SG flag.F.SG red-F.SG/yellow-F.SG/black-F.SG
 ‘the red/yellow/black flag’

-
- (i) [braon i bež] je kupio [t majicu].
 brown and beige is bought [t shirt.ACC]
 ‘She bought a brown and beige shirt.’

This is also unexpected under the current account. The evidence may instead be suggestive of a prosodic account of inflectionless adjectives being unable to undergo LBE; I leave the resolution of this issue to future research.

- b. le bandiere ross-e/giall-e/ner-e
the.F.PL flag.F.PL red-F.PL/yellow-F.PL/black-F.PL
'the red/yellow/black flags'
- c. il sacco ross-o/giall-o/ner-o
the.M.SG bag.M.SG red-M.SG/yellow-M.SG/black-M.SG
'the red/yellow/black bag'
- d. i sacchi ross-i/giall-i/ner-i
the.M.PL bag.M.PL red-M.PL/yellow-M.PL/black-M.PL
'the red/yellow/black bags'
- (145) a. la bandiera **blu/viola/beige** /le bandiere **blu/viola/beige**
the flag.F.SG blue/purple/beige /the flag.F.PL blue/purple/beige
'the blue/purple/beige flag(s)'
- b. il sacco **blu/viola/beige** /i sacchi **blu/viola/beige**
the bag.M.SG blue/purple/beige /the bag.M.PL blue/purple/beige
'the blue/purple/beige bags'
- (146) a. il biglietto **gratis** / i posti **gratis**
the ticket.M.SG free / the ticket.M.PL free
'the free seat(s)'
- b. la birra **gratis** / le birre **gratis**
the beer.F.SG free / the beer.F.PL free
'the free beer(s)'
- (147) a. il ristorante **chic** / i ristoranti **chic**
the restaurant.M.SG **chic** / the restaurant.M.PL **chic**
'the chic restaurant(s)'
- b. la pizzeria **chic** / le pizzerie **chic**
the pizzeria.F.SG **chic** / the pizzeria.F.PL **chic**
'the chic pizzeria(s)'

Evidence indicates that these EI adjectives are not compounded with the noun. For the gradable predicates among them, they do permit comparatives, as in (148), which supports their adjectival and modificational status. They also need not appear in a position linearly adjacent to the noun; there may be intervening adjectives (149), suggesting they do not form a nominal compound with the head noun. (Note that other adjectives may also follow them (150).)

- (148) a. la camicetta più blu
 the.F.SG shirt.F.SG more blue
 ‘the bluer shirt’
- b. il ristorante più chic
 the.M.SG restaurant.M.SG more chic
 ‘the more chic restaurant’
- (149) a. la tazza italian-a blu
 the cup Italian-F.SG blue
 ‘the blue Italian cup’
- b. il ristorante italian-o chic
 the restaurant Italian-M.SG chic
 ‘the chic Italian restaurant’
- (150) il ristorante chic più bell-o
 the restaurant chic more beautiful-M.SG
 ‘the more beautiful chic restaurant’

Inflectionless adjectives in Italian have been reported to exhibit a striking syntactic restriction: specifically, they are ungrammatical in prenominal attributive position (Zamparelli 1993, 156-157; Cardinaletti 1998, 85-86).⁵⁰ This is illustrated in (151): while inflected color terms can be prenominal (151-a), inflectionless color terms cannot be (151-b), while both types of color adjectives can appear postnominally (151-c).

- (151) a. la {rossa / gialla / nera / bianca / rosea...} bandiera
 the {red / yellow / black / white / pink...} flag
- b. *la {blu / viola / beige / fucsia / rosa} bandiera
 the {blue / purple / brown / fuchsia / pink} flag
- c. la bandiera {blu / viola / beige / rossa / gialla}
 the flag {blue / purple / brown / red / yellow}

⁵⁰Cardinaletti (1998) also reports that Noun Phrase Ellipsis is ungrammatical with indeclinables if a determiner is stranded, though it is acceptable with a demonstrative. The data, however, are not so clear – NPE does appear to be possible with an indefinite determiner. I leave this to future research.

- (i) la *(camicetta) rosa / quella (camicetta) rosa
 the (shirt) pink / that (shirt) pink
 ‘the/that pink shirt’ (Cardinaletti, 1998, 96)
- (ii) Ci sono due squadre avversarie, una rossa e una **blu**.
 there are two teams opposing, a red and a blue
 ‘there are two opposing teams, a red team and a blue team’

The judgments in (151) are as reported by Zamparelli (1993). However, my own consultants inform me that, while there is indeed a contrast between (151-a) and (151-b), the former is poetic and not very acceptable. This is likely due to the particular semantics associated with the marked prenominal position (on which, see Cinque 2010, 2014; and references therein), which may make these examples markedly odd. The contrast becomes sharper for *chic* ‘chic’, when compared with *elegante* ‘elegant’, the latter being a regularly inflected adjective.⁵¹ *Elegante* is shown appearing prenominally from a corpus example in (152), and was verified with native speakers for acceptability.⁵²

- (152) [...l’Hotel Villa Novecento (con vista sul Monte Bianco) propone, a partire da 420 euro a persona, tre pernottamenti e altrettante prime colazioni...]
‘The hotel Villa Novecento (with a view of Mont Blanc) offers, starting from 420 euros a person, three nights and as many breakfasts,’
- a. una cena all’ elegante ristorante Novecento...
a dinner at.the elegant restaurant Novecento
‘a dinner at the elegant restaurant Novecento...’ (internet example)⁵³

While *elegante* and *chic* are both eligible to appear postnominally (153-a), *chic* is unable to appear prenominally (153-b), unlike *elegante*.

⁵¹*Elegante* belongs to the class of adjectives that is syncretic across genders, but varies according to number: *elegant-e* ‘elegant-SG’, *elegant-i* ‘elegant-PL’.

⁵²Another EI adjective is *sexy* ‘sexy’, which is also ungrammatical in prenominal position:

- (i) a. La danza sensuale/sexy (ha impressionato tutti.)
the dance sensual.AGR/sexy has impressed everyone
‘The sensual/sexy dance impressed everyone.’
b. La {sensuale/*sexy} danza (ha impressionato tutti.)
The sensual.AGR/sexy dance has impressed everyone
‘The sensual/sexy dance impressed everyone.’

⁵³Source URL: http://guide.supereva.it/centri_benessere/interventi/2006/01/240485.shtml.

- (153) a. una cena al ristorante elegante/chic Novecento
 a dinner at.the restaurant elegant/chic Novecento
 ‘a dinner at the elegant restaurant Novecento’
- b. *una cena allo chic ristorante Novecento
 a dinner at.the chic restaurant Novecento
 ‘a dinner at the chic restaurant’

Recall from (148) that the adjective *chic* and the other EI color adjectives can be part of comparative expressions, suggesting that the problems do not stem from the inflectionless adjectives’ inability to be gradable. Interestingly, prenominal EI adjectives improve when they they are intensified. My consultants inform me that intensification with *molto* ‘very’ is generally unnatural with prenominal modifiers; however, the less common *assai* ‘very’ is degraded but acceptable. Crucially, my consultants describe the degradation for EI adjectives as ‘the same’ as the degradation for typical, inflected adjectives (154).

- (154) a. ?l’assai elegante ristorante b. ?l’assai chic ristorante
 the.very elegant.AGR restaurant the.very chic restaurant
 ‘the very elegant restaurant’ ‘the very chic restaurant’

Other degree adverbs also improve the felicity of these EI adjectives in prenominal position:

- (155) ?l’altrettanto chic ristorante / ?l’eccezionalmente chic ristorante
 the.equally chic restaurant / the.exceptionally chic restaurant
 ‘the equally/exceptionally chic restaurant’

Most strikingly, the parallel example with *chic* becomes acceptable in the prenominal position when it is affixed with the ‘absolute superlative’ marker *-issim-*. While *chic* is formally invariable with respect to gender and number features (hence EI), when it is suffixed with *-issim-*, the resultant complex is obligatorily inflected. This suffixed form varies in inflection like other adjectives, and most relevant for current purposes, it renders it possible to have *chic* as the base of a prenominal adjective.⁵⁴

⁵⁴Zamparelli (1993) points out that *issim-* is incompatible with inflectionless color adjectives:

- (156) una cena allo chicch-issim-o/*chic ristorante Novecento
 a dinner at.the chic-SPRL-M.SG/chic restaurant Novecento
 ‘a dinner at the (very) chic restaurant Novecento’

If it were only for the *-issim-* facts, we might suppose that the relevant property is inflectionfulness – since *chic* is uninflectable while *chicchissimo* is obligatorily inflected. But the *assai* facts in (154) point instead to the relevant property being scalarity.

The relevance of scalarity is somewhat complex: it is not a matter of incompatibility of EI adjectives with scalar interpretation (as they can be intensified, form comparatives, etc.). Rather, the dimension of scalarity is confined to these EI adjectives when they occur without any other element in the *aP*.

A similar point is raised by Zamparelli (1993). As is well-known, nationality/provenance adjectives in Italian – such as *italiano* ‘Italian’ – must be postnominal (e.g. Cinque 2010, 71-72). Zamparelli observes, however, when these are suffixed with *issim-*, they are interpreted in a ‘manner reading’ which bears the appropriate scalar properties, and are thus permitted prenominaly.⁵⁵

- (157) questo {*italiano / ✓italian-issimo} comportamento
 this Italian.AGR / Italian-SPRL.AGR behavior
 ‘this (very) Italian behavior’ (Zamparelli, 1993, 147)

Defectivity in the syntactic distribution of EI adjectives is limited to the prenominal position. For example, these adjectives are acceptable in predicative position (158), and

- (i) *blu-issimo / fucs-issimo / beig-issimo / ros-issimo / viol-issimo / indac-issimo
 blue-SPRL / fucsia-SPRL / beige-SPRL pink-SPRL / purple-SPRL / indigo-SPRL
 ‘very blue/fucsia/beige/pink/purple/indigo’

However, this does not seem to be a general property of inflectionless adjectives, as we observed for *chic*.

⁵⁵One unfortunate complication is that *assai* ‘very’ seems not to confer the same manner-type status as the absolute superlative morpheme, meaning it is still ungrammatical, according to my consultants, to use a nationality adjective like *italiano* if it is modified by *assai*. Recall that this was not the case for the EI element *chic*.

- (i) *l’assai italiano ristorante
 the.very Italian.AGR restaurant
 ‘the very Italian restaurant’

predicate fronting of the type in (159) (cf. Zamparelli 1993, 152) is permissible for inflectable and uninflectable adjectives alike. *Chic* can also be moved in an exclamative expression, such as that in (160).

- (158) Questo ristorante è chic.
 this restaurant is chic
 ‘This restaurant is chic.’
- (159) a. Elegant-e/chic, questo ristorante lo è sempre stato molto.
 elegant-SG/chic, this restaurant CL is always been very
 ‘This restaurant has always been very elegant/chic.’
 b. Giall-a/blu, questa camera lo è sempre stata molto.
 yellow-F.SG/blue, this room CL is always been very
 ‘This room has always been very yellow/blue.’
- (160) Quanto chic è questo ristorante!
 how chic is this restaurant
 ‘How chic is this restaurant!’

Lastly, EI adjectives can appear in indefinite pronoun constructions (on which, see e.g. Larson and Marušič 2004; Zamparelli 1995; Roehrs 2008):

- (161) qualcosa di chic/sexy/blu
 something of chic/sexy/blue
 ‘something chic/sexy/blue’

Why are inflectionless adjectives not permitted in prenominal attributive position on their own? One potential solution would be that they lack an adjectivizing layer, which, if present, would trigger node-sprouting like other adjectives. The problem with this account is that when these EI adjectives appear in contexts that appear adjectivized (as in the case of a comparative (*più chic* ‘more chic’) or are intensified, they remain inflectionless. Assuming the inflectionlessness is represented the same way across the bare use and the modified use, this solution does not capture the facts.

Another ostensibly viable solution could involve different agreement relations being established between the noun and the adjective depending on position. This view is adopted,

for example, by Bonet et al. (2015). They assume a Cinquean analysis of adjectival order within the DP (e.g. Cinque 2010), where the order of the noun and accompanying adjectives is determined by movement of *nP* (or larger phrases). With this syntactic backdrop, on the basis of morphological agreement asymmetries between prenominal and postnominal modification, Bonet et al. (2015) distinguish between agreement morphology arising from spec-head agreement for postnominal adjectives (triggered by movement) and postsyntactic concord for prenominal adjectives. Their theory offers a potential explanation for the relative fragility of prenominal agreement in various Romance varieties, including Northeastern Central Catalan. In this dialect, given the appropriate phonological conditions, prenominal attributive elements lack plural agreement morphology, whereas postnominal adjectives always retain it:⁵⁶

- (162) molt_ poc_ professionals bons presents
 much few professional-PL good-PL present-PL
 ‘very few good professionals present’ (modified from Bonet et al. 2015, 11)

This asymmetry is reminiscent of the asymmetrical phonological phenomenon in Italian called *troncamento* (‘truncation’), which affects prenominal material, including determiners, demonstratives, and some adjectives in specific combinations of gender and number (see e.g. Petrosino 2018), but never postnominal counterparts. (Note that the interpretation of *buono* ‘good’ varies depending on its position with respect to the noun.)

- (163) a. Un buon attaccante non farebbe mai una cosa del genere
 a good forward not would.do never a thing of.the kind
 ‘A forward good at playing forward would never do such a thing’
 b. Un attaccante buon*(-o) non farebbe mai una cosa del genere
 a forward good-AGR not would.do never a thing of.the kind
 ‘A good-hearted forward would never do such a thing’ (or the interpretation
 from (a)) (adapted from Cinque 2014, 7)

One way of putting this generalization is that Romance prenominal adjectives can be less

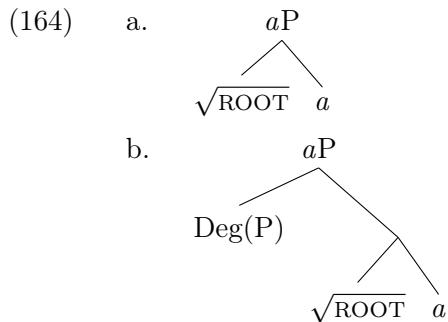
⁵⁶The most relevant element to observe is *poc* ‘few’, as *molt* ‘very’ is not modifying the head noun, and its status is not made clear.

morphologically marked than postnominal adjectives. However, in the case of the exceptionally inflectionless adjectives, it is basically the *opposite* that holds: these exceptionally unmarked adjectives are acceptable postnominally on their own, but not prenominal. Thus the asymmetry that Bonet et al. (2015) analyze cuts in the opposite direction from the EI adjectives, suggesting their analysis would not be appropriate to extend to the present case.

The properties to account for are i) the inflectionlessness of certain adjectives irrespective of context, ii) their ability to be modified in a way that indicates they themselves can be gradable modifiers, iii) the inability of the adjective to be prenominal by itself.

I tentatively propose that speakers infer from the diacritic status of inflectionlessness of an adjective in Italian that the structure in which they occur is ‘small’; in particular, I propose that EI adjectives are taken (without further modification) to occur in *aP* without further degree structure.⁵⁷ However, crucially, this does not mean that they *cannot* appear with degree structure. With overt degree morphology accompanying EI adjectives, degree structure can be added.

The structure of an EI adjective ‘in isolation’ is thus as in (164-a), while a typical gradable adjective is as in (164-b), and the exceptionality is encoded as in (165).



- (165) Node-Sprouting: For an MWd a^0 , Perform R
- R : If $[\sqrt{\text{ROOT}} a]_a$ is listed (e.g. $\sqrt{\text{CHIC}}$, $\sqrt{\text{SEXY}}$, etc.), no change.
- Else: $a^0 \rightarrow [a^0] \text{Infl}]_{a^0}$

For concreteness, I assume the order of Italian adjectives is derived via roll-up movement

⁵⁷This is admittedly stipulative.

along the lines of Cinque 2010, 2014. I follow Zamparelli (1993) and Giurgea (2009) in assuming that scalarity is a necessary condition for (non-intensional, non-determiner-like) quality adjectives to appear preminally in Italian. Modified EI adjectives occurring with degree modification will bear the appropriate semantics to be adjoined at a syntactic site such that they will come to be linearized preminally. In contrast, unmodified EI adjectives will lack the requisite scalarity because they lack degree structure. This accounts for the contrast in prenominal position seen in (166).

- | | | |
|-------|--|---|
| (166) | a. *lo chic ristorante
the chic restaurant
'the chic restaurant' | b. ?l'assai chic ristorante
the.very chic restaurant
'the very chic restaurant' |
|-------|--|---|

One advantage of this account is that it captures the fact that the degree modification in (166-b) has no effect on the inflectional status of *chic*. That is, when degree structure is added (because of *assai*), it does not suddenly become *l'assai chic-o ristorante*, because the exception is stated over the MWd *chic*. As far as I can tell, this would be expected under an approach that implicationally relates degree structure with agreement (as in the syntactic account of Zamparelli 1993).⁵⁸

The account also captures the flexibility of the position of EI adjectives; recall that they can appear in predicative position (158) and can be moved freely (159). The issue that arises is thus confined only to being alone in prenominal position.

With respect to the apparent need for overt morphology to support degree structure, related phenomena have been observed for other domains. For example, Marantz (2009) notes that the verbal prefix *out-* in English helps verbalize roots that are otherwise difficult to verbalize, even though *out-* is itself not a verbalizing head:

- | | | |
|-------|-------------------------------------|--------------------------------------|
| (167) | a. *Dell Apple'd (Apple) last year. | b. Dell out-Apple'd Apple last year. |
|-------|-------------------------------------|--------------------------------------|

I leave a more precise account of a speaker's connection between inflectionlessness and 'small' structure to further research.

⁵⁸Relating agreement to the presence of degree structure appears not to be correct for an independent reason; non-gradable adjectives are like gradable adjectives in always being inflected.

To summarize, exceptionally inflectionless adjectives in Italian are unable to appear (on their own) in prenominal position. The account offered here relates this to what is canonically a small, degreeless structure that is semantically incompatible with a syntactic position which we would expect to correspond to a linearly prenominal position; movement is not directly implicated. That inflectionlessness has no direct effect on the ability to be in prenominal position is evidenced by modification of inflectionless forms, which improves the felicity of EI adjectives in prenominal position. More research is needed for identifying the precise determinants.

2.4.4 Summary

This section examined phenomena that challenge the modular separation of the syntax and the postsyntax. A derivational trapping analysis was offered for BCS (along the same lines as the earlier BCS analysis in 2.3.4); and for Italian, it was shown that EI adjectives are permitted in a purportedly banned syntactic position when they are modified. We thus maintain that inflectionlessness is fundamentally a morphological fact, and that it cannot affect the narrow syntax.

2.5 Conclusions

This chapter used the phenomenon of inflectionlessness to explore syntactic and postsyntactic operations. It was maintained that inflectionlessness is (or can be) fundamentally a fact about morphology, and can be encoded in a way that affects other postsyntactic operations, but cannot affect syntactic operations. Cases that involve outright ungrammaticality with exceptionally inflectionless elements were analyzed with derivational trapping analyses, in which postsyntactic operations were still triggered but could not be executed.

It should be highlighted that there are two dissociable dimensions to this proposal. The first is that there is a distinction for inflectional agreement morphology between ‘zero’ and ‘not there’ for the purposes of postsyntactic operations. This split helps us explain

why disruptions occur for inflectionless elements but not for, say, irregular allomorphy.⁵⁹ We thus maintain a constrained theory of syntax/morphology interactions and morphology/morphology interactions while capturing defective distributions and other morphosyntactic effects that arise in the case of inflectional elements.

The second dimension concerns the derivational locus of ‘where things go wrong’ for expressions that have no licit output. A strong version of this approach takes all ungrammatical expressions to be ungenerable, in the sense that, for a particular hypothetical output, no conceivable input is such that it will yield that output; in the strongest version, no work is done by negative constraints.

The focus has been on postsyntactic disruptions that ultimately stem from narrowly defined, exceptional circumstances. However, that is not to say that the failure to satisfy conditions on operands is restricted to this domain, or even to exceptional circumstances; see Chapter 4.

The next chapter explores the distribution of adjectival inflection in German in depth as a study of possible targets for node-sprouting rules, how exceptionally inflectionless elements represent the absence of inflection, and how inflectionlessness can lead to derivational traps.

⁵⁹It is worth highlighting the contrast between exceptionally defined radical impoverishment on the one hand and other deletion operations like (featural) impoverishment on the other. While we may expect that the former can give rise to derivational trapping, we do not (necessarily) expect the latter to. This is because the motivations for deletion are distinct; impoverishment feeds the realization of underspecified (possibly ‘default’) forms, while radical impoverishment as it is described here deletes nodes in exceptional circumstances.

Chapter 3

German Adjective Inflection: Linear Conditions, Exceptional Inflectionlessness, and Derivational Traps with Noun Phrase Ellipsis

This chapter investigates the distribution of German adjectival inflection to probe the nature of the postsyntactic operations that produce, move, and delete agreement affixes. I argue that the agreement morphology on German adjectives targets a phrasal projection (cf. Hanink 2018a,b), and that node-sprouting is conditioned by linear order, a factor which is, by hypothesis, visible only along the PF branch and not in narrow syntax. After establishing the basic distributional characteristics of adjectival inflection, I examine exceptionally inflectionless adjectives such as *sexy* ‘sexy’ and *lila* ‘purple’, whose exceptionality I also demonstrate is sensitive to linear order. Lastly, I address the defectivity in distribution of these exceptionally inflectionless adjectives, offering novel evidence that adjectives like *lila* cannot be stranded in noun phrase ellipsis (cf. Muysken and van Riemsdijk 1986). I offer an account of this defectivity in terms of derivational trapping, whereby a rule is triggered but cannot be executed (see Section 1.2).

My claims about adjectival inflection in German will relate three generalizations which have been discussed in previous literature, but which I will elaborate on to motivate my own analysis:

- (1)
 - a. Prenominal attributive adjectives are the only adjectives that inflect.
 - b. Adjectival inflection applies to the rightmost element in an attributive phrase.
 - c. Uninflected adjectives cannot be stranded in noun-phrase ellipsis (NPE).

I propose that these three generalizations can be accounted for if the following holds:

- (2)
 - a. nP adjuncts that are left-adjacent to (segments of) nP are the target for node-sprouting of agreement morphemes.
 - b. Node-sprouting is a postsyntactic rule that is executed when its conditions are met and:
 - (i) The conditions on node-sprouting can be linear rather than structural.
 - (ii) Agreement morphemes can be exceptionally deleted.
 - c. The exceptional absence of an inflectional morpheme can trigger an operation that can cause a derivational crash in elliptical environments.

The proposal has implications for the relative timing of grammatical operations. In particular, the relevance of linear information lends support to the idea that node-sprouting applies – or at least can apply – very late in the derivation, consistent with its proposed postsyntactic status.

The rest of this chapter is organized as follows. In Section 3.1, I describe the distribution of adjectival inflection as it relates to several dichotomies, including: i) attributive/predicative, ii) prenominal/postnominal, and iii) direct/indirect modification; a study of these dimensions reveals that stating the node-sprouting rule in linear terms is superior to alternatives. In Section 3.2, I discuss the phrasal character of inflection, building on observations from Roehrs (2006) and Hanink (2018a,b) while offering an alternative treatment in which all left-adjoined XPs trigger node-sprouting. In Section 3.3, I discuss exceptionally uninflected adjectives such as *lila* and *sexy* and demonstrate the linear dimension of their exceptionality, offering a deletion-based account. Section 3.4 demonstrates the ungrammaticality of stranding inflectionless adjectives in noun phrase ellipsis (NPE) (cf. Muysken and

van Riesmndijk 1986; Saab and Lipták 2016; Murphy 2018; and others), for which I offer an account in terms of derivational trapping (on which, see Section 1.2). This account also relies on the notion of linear adjacency, and captures linear patterns that have heretofore not been observed in the literature. Section 3.4 also offers a comparison with EI elements in NPE in Modern Greek, which are felicitous. Section 3.5 highlights differences between the current approach and others including OT approaches. Section 3.6 concludes.

3.1 The Syntactic Distribution of Adjectival Inflection

In this section, I describe the syntactic distribution of German adjectival inflection. I demonstrate what the relevant conditions are for prenominal adjectives, showing that the conditions on inflection are linear. If linearization is postsyntactic, the evidence supports the postsyntactic status of node-sprouting.

3.1.1 Predicative adjectives

It is well-known that German distinguishes attributive from predicative adjectives in terms of inflection (e.g. Vikner 2001; Durrell 2002; Schoorlemmer 2014; among many others): in essence, prenominal attributive adjectives bear inflection while predicative adjectives do not (3). Among prenominal attributive adjectives, there is a further well-known distinction between so-called ‘strong’, ‘weak’, and ‘mixed’ inflection forms, the choice of which is dependent on properties of D. The choice between strong, weak, and mixed is a complex issue and is not the focus of this chapter (see Roehrs 2015 and references therein). Inflectional suffixes for prenominal attributive adjectives are listed in the tables in (4)-(6).¹

- (3) a. Ein krank*(-er) Mann (ist hier.)
 a sick*(-NOM.M.SG) man (is here)
 ‘A sick man (is here.)’

¹I would like to thank Richard Zimmerman and Johanna Benz for their insight on various topics here. Uncited data come from them as well as other speakers, including Martin Salzmann and Clara Scholtes.

- b. Ein Mann ist krank(*-er).
 a man is sick(*-NOM.M.SG)
 ‘A man is sick.’

(4) Strong Inflection

	M	F	N	PL
NOM	-er	-e	-es	-e
ACC	-en	-e	-es	-e
DAT	-em	-er	-em	-er
GEN	-es	-er	-es	-er

(5) Weak Inflection

	M	F	N	PL
NOM	-e	-e	-e	-en
ACC	-en	-e	-e	-en
DAT	-en	-en	-en	-en
GEN	-en	-en	-en	-en

(6) Mixed Inflection

	M	F	N	PL
NOM	-er	-e	-es	-en
ACC	-en	-e	-es	-en
DAT	-en	-en	-en	-en
GEN	-en	-en	-en	-en

One question that arises is if, between the two, the environments of either inflected adjectives or uninflected adjectives constitute a natural class. If the environments for inflected adjectives constitute a natural class while the environments for uninflected adjectives do not, this would provide evidence in favor of a single node-sprouting rule that is triggered under certain conditions.

Uninflected adjectives have a fairly wide distribution. In addition to copular constructions, adjectives also remain uninflected in secondary depictives (7-a), causative constructions (7-b), secondary resultatives (7-c), and small clauses (7-d). While this may seem like a heterogeneous collection, however, these environments do have in common that they are not modificational; rather, they are predicational (see e.g. Rothstein 2017 and references).²

²One question is whether the inflectional asymmetry between attributives and predicatives is in some sense ‘natural,’ due to a markedness relation between the two environments. Evidence against such a relationship comes from Hungarian, which inflects adjectives for case and number when they are predicative but not when they are attributive (Rounds, 2013, 152).

- (7) a. Hans lief krank(*-er) davon.
 Hans ran sick(-NOM.M.SG) away
 ‘Hans ran away sick.’
- b. Maria machte (den) Hans krank(*-en).
 Maria made (the.ACC.M.SG) Hans sick(-ACC.M.SG)
 ‘Maria made Hans sick.’
- c. Er hat seine Familie magenkrank(*-e) gekocht.
 He has his family stomach.sick-AGR cooked
 ‘He cooked his family stomach-sick.’ (adapted from Kratzer 2005)
- d. Ich finde ihn interessant(*-en).
 I find him interesting(-AGR)
 ‘I find him interesting.’

As a first pass, it seems that all DP-external adjectives remain uninflected. While this is true, DP-external adjectives are not the only ones that remain uninflected.

3.1.2 Attributives

The difference between inflected vs. uninflected does not reduce to adnominal vs. clausal. Internal to the nominal domain, not all adjectival modifiers are inflected. In particular, postnominal adjectives are inflectionless, thus patterning with copular adjectives.

- (8) das Beweisstück wichtig(*-es) für die Verurteilung
 the exhibit important(-NOM.N.SG) for the sentencing
 ‘the exhibit important for the sentencing’ (Roehrs, 2008, 7)

The only major wrinkle in this generalization comes from postnominal adjectives with quantified or indefinite pronouns, which bear inflection like prenominal adjectives (Roehrs, 2008).

- (9) a. etwas Wichtig*(-es) b. mit jemand Wichtig*(-em)
 something important(-NOM.N.SG) with someone important(-AGR)
 ‘something important’ ‘with someone important’

However, Roehrs (2008) argues convincingly that these adjectives are prenominal modifiers of a lower, unpronounced noun. For example, Roehrs shows that like prenominal

modifiers but unlike postnominal modifiers with nouns, these adjectives take adjectival complements that must be linearized to the left of the adjective (10) and they resist modification by *genug* ‘enough’ (11).³ See also Section 3.4 for evidence that a lower noun is elided in these constructions.

- (10) a. etwas einer Villa Ähnlich-es/ ?*etwas Ähnlich-es einer Villa
something a villa similar-AGR/ something similar-AGR a villa
‘something similar to a villa’
- b. das einer Villa ähnlich-e Haus/ *das ähnlich-e einer Villa Haus
the a villa similar-AGR house/ the similar-AGR a villa house
- c. das Haus ähnlich einer Villa/ das Haus einer Villa ähnlich
the house similar a villa/ the house a villa similar
‘the house similar to a villa’ (Roehrs, 2008, 10-11)
- (11) a. etwas Wichtig-es (?*genug)
something important-AGR (enough)
‘something important enough’
- b. ein wichtig-es (*genug) Beweistück
an important-AGR (enough) exhibit
‘an important enough exhibit’
- c. das Beweistück wichtig (genug) für den Fall
the exhibit important (enough) for the case
‘the exhibit important (enough) for the case’ (Roehrs, 2008, 8)

Adnominal adjectives with quantified pronouns are thus not an exception to the pattern: prenominal adjectives are inflected, and no other adjective is. Given this distribution, we can hypothesize that inflectionlessness is the ‘default’, and that a node-sprouting rule is triggered specifically for prenominal adjectives.⁴

³Regarding the latter, Murphy (2018, 349) provides an example that some speakers, including my consultants, do accept, with the inflection going on *genug* ‘enough’. These examples are also relevant for the phrasal placement of agreement morphemes, on which, see Section 3.2.1.

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

⁴Schoorlemmer (2014, 272-275) considers the possibility that German is like other Germanic languages in having agreeing predicative adjectives; the difference then arises when predicative adjectives move out of their base position, thereby stranding the inflectional affix, which gets deleted. However, this seems to be an unnecessary complication, given that the evidence that predicative adjectives move is not compelling.

However, postnominal adjectives could either be uninflected because of their linear position with respect to the noun, or because they appear in reduced relative structure, making them akin to predicative adjectives (on which, see e.g. Cinque 2010). However, there are two reasons to reject the latter option: i) postnominal adjectives are sometime more like classifying adjectives than predicative adjectives and ii) some prenominal adjectives behave as if they appear in reduced relatives. These two points are addressed in turn.

3.1.3 ‘Prenominal’ as a linear condition

There are two types of evidence that indicate that the conditions on inflection are best treated in linear rather than structural terms: i) uninflected postnominal adjectives that behave more like classifying adjectives than reduced relatives and ii) inflected prenominal modifiers that behave like reduced relatives. I address each in turn.

On Uninflected Postnominals

Having a linear condition on inflection gives us the prediction that postnominal adjectives will be uninflected even in unusual or stylized circumstances, regardless of the syntacticosemantic status of the postnominal adjective.⁵

There are well-known poetic examples of unmodified, ‘light’ adjectives appearing postnominally – perhaps most famously *Röslein rot* ‘rose.DIM red’ from the Goethe poem *Heidenröslein*. Some menu items in the language appear with postnominal ordering, and these adjectives are invariably uninflected (12), even though this is not a general property of menu items; (non-compounded) prenominal adjectives in menu items are inflected (e.g. *Belgische Waffeln* ‘Belgian waffles’).⁶

- (12) a. Forelle blau(*-e)
 trout blue(-AGR)
 b. Spaghetti italienisch
 spaghetti Italian

⁵See Trost 2006 for a description of various environments in which German adjectives are uninflected.

⁶For more examples of exceptionally postnominal adjectives in advertisements – which also lack inflection – see Trost 2006.

- c. Whisky pur(*-er)
whiskey pure(-AGR)
(adapted from Trost 2006, 383)

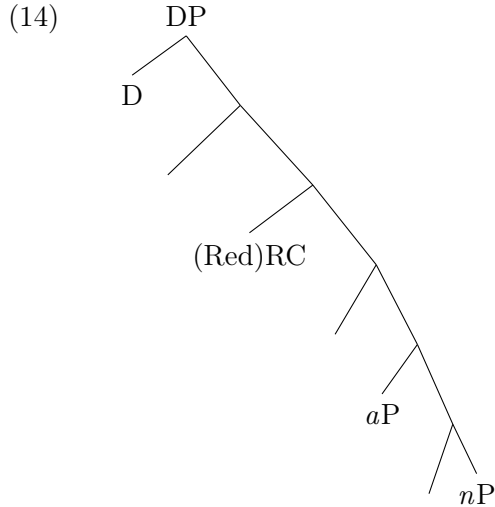
At least some of these adjectives appear to have a classificatory function, and cannot be used in predicative position with the same meaning (13).

- (13) #Diese Forelle ist blau.
this trout is blue
Intended: ‘This trout can be identified with the dish *Forelle blau*.’

The evidence from these atypical postnominal adjectives thus supports a linear condition over a reduced relative analysis of adjectival inflection.

On Direct vs. Indirect Modifiers

Cinque (2010, 2014) and others have argued that attributive adjectives with interpretive properties akin to predicative adjectives are ‘indirect’ modifiers, which are i) part of reduced relative clauses and ii) are merged higher in the nominal domain. In contrast, other attributive adjectives are ‘direct’ modifiers (i.e. the modifiers *are aPs*) that are merged lower in the nominal domain. Cinque’s theory accounts for various ordering and interpretive properties within the nominal domain. The tree in (14) outlines the basic adjunction scheme in the nominal domain. (While Cinque takes these modifiers to be specifiers of different functional projections, I will assume they are all adjoined to *nP*.)



(adapted from Cinque 2010, 25)

Given that German adnominal modifiers come either inflected or uninflected, a natural hypothesis would be that the uninflected, postnominal adjectives appear in reduced relative clauses. This would unite them with predicative adjectives, which are also uninflected; and the inflected prenominal adjectives would then be direct *aP* modifiers. A node-sprouting rule would target only the direct *aP* modifiers, with the reduced relatives being too far embedded in the adnominal phrase.

(15) **Direct Modifier Node-Sprouting** (to be rejected): Direct adjectival modifiers are inflected (indirect modifiers are ‘buried’ too deeply in clausal structure).

In order for this to be correct, it would have to be the case that prenominal adjectives are always direct modifiers while postnominal adjectives are always indirect modifiers. I demonstrated above that the latter is false; I now focus on the former, and demonstrate that it too is false: not all prenominal adjectives behave like direct modifiers.

Many prenominal adjectives have properties that Cinque attributes to reduced relative sources. I demonstrate this for four properties here: prenominal modifiers can have i) restrictive (16) and intersective (17) interpretations; ii) an ACD reading of *possible* (18); and iii) a relative (rather than absolute) reading of the superlative (19).

- (16) jedes rot*(-e) Auto
 every red-AGR car
 ‘every car that is red’ (cf. ‘every car, which is red’)
- (17) die schön*(-e) gut-e Tänzer-in
 the beautiful-AGR good dancer
 the dancer who dances skillfully and is beautiful
- (18) Ich habe jeden möglich*(-en) Kandidaten interviewt.
 I have every possible(-AGR) candidate interviewed
 ‘I have interviewed every candidate that it was possible to interview’ (cf. ‘I have interviewed every potential candidate’)
- (19) Wer hat den höch-st*(-en) Berg bestiegen?
 Who has the tall-est(-AGR) mountain climbed?
 ‘Who has climbed the tallest mountain’ among us? (cf. Who has climbed Mt. Everest?)

These diagnostics support an indirect modification analysis for at least some prenominal modifiers. Cinque (2010) also provides other evidence that some prenominal modifiers in German are clausal; these modifiers also bear inflection. Cinque points to the floating distributive phrase *einer nach dem anderen* ‘one after the other’, whose case marking on *einer* matches that of the argument it is identified with, which can be PRO. As Cinque points out, this phrase can appear in an attributive participial modifier – its case then matches that of a PRO internal to the participial modifier and not the case of the modified argument:

- (20) (Wir sahen) die [einer/*einen nach dem anderen angekommen-en]
 We saw the one.NOM/one.ACC after the other arrived-AGR.ACC
 Studenten.
 student.ACC
 ‘We saw the students arrive one after the other.’ (Cinque, 2010, 56)

I take this evidence to suggest that the ‘amount-of-structure’ approach is not on the right track, and that the linear condition is superior.⁷

⁷Alternatively, one could consider a distribution of inflection that is stated in terms of c-command with other elements in the nominal domain:

To summarize so far, we have seen that pronominal attributive adjectives are inflected, while others are not, and that this condition is best characterized in linear rather than structural terms (i.e. preceding the noun). In the next section, I argue that the node-sprouting rule that produces agreement morphology targets the phrasal level. This will mean that the adjacency relation described here is best characterized as * adjacency holding between phrases.

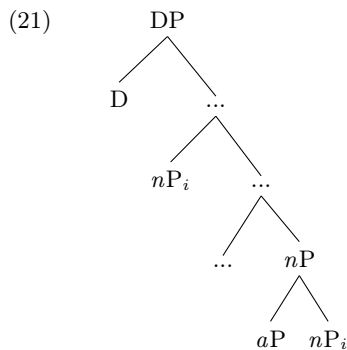
3.2 Node-sprouting at the phrase

In this subsection, I argue that the target of node-sprouting is at the level of the phrase (cf. Hanink 2018a,b). I also join the linear condition on inflection discussed in the previous section together with the proposed target of node-sprouting.

I first discuss how complex degree expressions point to the phrase as the target of node-sprouting. I then argue against Hanink’s (2018a; 2018b) proposal that DegP is the correct target, opting instead for an analysis in which all XPs that are immediately left-adjacent to

- (i) Option I: Modifiers inflect when c-commanded by D.
 Option II: Modifiers inflect when they c-command *n*.

Option I does not fare very well for postnominal modifiers, because they too are c-commanded by D and would therefore be expected to inflect, contrary to fact. It could, however, be possible to derive the uninflectedness of postnominal modifiers with Option II. If we assume, following Cinque (2010), that postnominal ordering can be derived through phrasal movement of *nP* (or a phrase containing *nP*), then we could have a basic structure like (21):⁸



We would then say that Option II only considers the head of the chain, in which case, the moved *nP* will fail to satisfy the conditions for inflection of *aP*, because the moved *nP* will not be c-commanded by *aP*. I leave evaluation of this option to future research; I instead adopt a linear condition on inflection.

*n*P receive inflection.

3.2.1 Complex degree expressions

Complex degree expressions illustrate two properties of the distribution of adjectival inflection in German. First, sprouting a node from the adjectival head *a* does not capture the facts (Hanink, 2018a,b). Second, a phrasal analysis of node-sprouting is superior to an MWd analysis.

Hanink (2018a,b) observes that a node-sprouting rule that targets just terminal nodes has difficulty accounting for the distribution of adjective inflection in degree expressions. For example, the comparative is a synthetic form with the order ADJ-CMPR-INFL. If a node-sprouting rule applied to the adjectival head, this would incorrectly predict that inflection should occur between the adjectival base and the comparative morpheme, contrary to fact.

- (22) a. ein schnell-er-es Auto
 a fast-CMPR-AGR car
 ‘a faster car’
- b. *ein schnell-es-er Auto
 a fast-AGR-CMPR car
 ‘a faster car’
- (Hanink, 2018a, 2)

Switching from an analysis that targets *a* to one that targets Deg does not fare any better, as it incorrectly predicts that, in an analytic degree expression, the degree element should bear inflection rather than the adjective, contrary to fact:

- (23) a. ein so(*-es) schlecht*(-es) Hotel
 a so bad hotel
 ‘so/as bad a hotel’
- (Hanink, 2018a, 94)

I would also add that deadjectival nominals also challenge node-sprouting at *a*. Using examples with overt adjectivizing suffixes (24), we can see that German deadjectival nominals do not bear internal inflectional morphology (despite the linear adjacency between *a* and *n*).

- (24) a. Dank-bar(*-es/*-e/*-en)-keit
 thank-ADJ(-AGR)-NMLZ
 ‘gratitude’
- b. Crem-ig(*-es/*-e/*-en)-keit
 cream-ADJ(-AGR)-NMLZ
 ‘creaminess’

While these issues are problematic for a head-only node-sprouting operation, they are not issues for an analysis in which node-sprouting on adjectives occurs at the level of the MWd (see 3.2), a possibility not considered by Hanink. Several MWd analyses could be possible in principle, depending on one’s assumptions about the derivation of synthetic degree forms.

However, Hanink observes (along with Roehrs 2006) that there is an even broader generalization about the position of inflection, which I will state as follows:

- (25) **Rightmost Generalization:** Adjectival inflection always appears at the rightmost edge of an adjectival modifier.

This generalization subsumes several environments. First, as observed by Roehrs (2006), pronominal degree expressions (e.g. comparatives and equatives) take inflectional morphology, but only do so on the rightmost element, rather than the adjective that heads the modifier. This can be seen in the contrast between (26) and (27), to which I also add the percent-construction in (28).⁹

- (26) a. ein braun-er-es Auto
 a brown-CMPR-AGR car
 ‘a browner car’
- b. das schnell-e Aufräumen
 the quick-AGR straightening.out
 ‘the quick straightening-out’
- (27) a. ein [brauner als braun-es] Auto
 a browner than brown-AGR car
 ‘a browner-than-brown car’
- b. das [so schnell wie möglich-e] Aufräumen
 the so quick as possible-AGR straightening.out
 ‘a quick-as-possible straightening out’
- (Roehrs, 2006, 222)

⁹Some speakers accept inflection occurring on both *bessere* and *prozentige* at the same time for the construction in (28). It seems likely that, in this case, they are using a right-node-raising structure that can be paraphrased ‘a better *probability* than 50 percent *probability*’.

- (28) eine [besser als 50-prozent-ig-e] Wahrscheinlichkeit
 a better than 50-percent-ADJ-AGR probability
 ‘a better than 50% probability’

Second, Hanink (2018b) shows that *tough*-type constructions (29) display the same behavior: only the rightmost element before the noun takes inflection.

- (29) ein [leicht(*-es) zu lesen-d-es] Buch
 an easy(-AGR) to read.INF-*a*-AGR book
 ‘a book that’s easy to read’ (Hanink, 2018b, 166)

Third, the participle *scheinen-d* ‘seem-PTCP’ can appear prenominally, with a (predicative) adjectival complement to its left. It shows the same agreement behavior: the rightmost element, *scheinen-d*, is inflected, while the predicative adjective internal to the modifier is not (30). Though it may be objected that (30) could be a compound, more complex expressions display the same behavior, as can be seen in (31), where an embedded predicative adjective has a complement – still, only *scheinen-d* is inflected.¹⁰

- (30) eine [ausweglos(*-e) scheinen-d-e] Lage
 a hopeless(-AGR) seem-ing-AGR situation
 ‘a hopeless-seeming situation’ (Hanink, 2018b, 161)

- (31) ein [[auf das team] stolz(*-er)] scheinen-d-er] Mann
 a [[of the team proud(-AGR)] seem-PTCP-AGR] man
 ‘a man who seems proud of the team’

Three additional phrasal effects not discussed by Hanink are also relevant to the general-

¹⁰Non-final members of a compound do not bear adjectival inflection. For example, to express an ordinal superlative such as *third-largest*, the ordinal and the superlative form a compound, and the ordinal remains uninflected:

- (i) das dritt(*-e)-teuer-st-e Ding
 the third-(AGR)-expensive-SPRL-AGR thing
 ‘the third-most expensive thing’
- (ii) das dritt*(-e) teuer-st-e Ding
 the third-(AGR) expensive-SPRL-AGR thing
 ‘the third member (in e.g. a sequence) among the expensive things’

ization. First, German modal superlatives with *möglich* ‘possible’ exhibit inflection only on the rightmost element of the prenominal phrase – *möglich* – and not on the superlative adjective (32-a) (Schwarz, 2005; Romero, 2013). Inflecting both the superlative and *möglich* gives rise to a distinct interpretation where the two modify the nominal independently (32-b).¹¹

- (32) a. Ich habe das [größt möglich-e] Geschenk gekauft.
 I have the large-SPRL possible-AGR present bought
 ‘I bought the largest present possible.’
- b. Ich habe das größt-e möglich-e Geschenk gekauft.
 I have the large-SPRL-AGR possible-AGR present bought
 ‘I bought the largest of the possible presents.’ (Schwarz, 2005, 190-191)

Second, there are also degree expressions involving two adjectives sharing the same dimension (see e.g. Kennedy and McNally 2005), which are similar but not identical to the constructions above. The (equative) construction in (33) again indicates that inflection goes on the rightmost element of the modifier, rather than the adjective that appears to head the phrase.

- (33) ein [so lang wie breit-er] Tisch
 a [so long how wide-AGR] table
 ‘a table as long as it is wide’

The last environment comes from modification with *genug* ‘enough’ (see Footnote 3) which for some speakers is grammatical with prenominal attributives; *genug* comes last in the phrase, and therefore bears the inflection.

- (34) %der [ja leider nicht [groß genug-e]] Topf
 the PRT unfortunately not big enough-AGR pot
 ‘the pot that was unfortunately not big enough’ (Murphy, 2018)

¹¹Unlike in English, a discontinuous modal superlative (with postnominal ‘possible’) is ungrammatical:

- (i) *das größt-e Geschenk möglich
 the largest-AGR gift possible
 ‘the largest gift possible’

The list in (35) reflects the environments supporting the validity of the Rightmost Generalization. Some members of the list may be more similar to each other (arguably counting as one environment rather than two).

(35)

Degree expressions in which inflection occurs at the end

‘Percent’ construction

tough-type constructions

Participles with embedded predicative adjectives

Modal superlatives

Equative with same dimensions

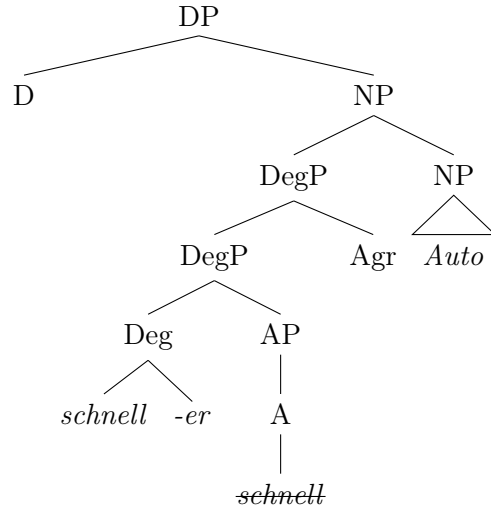
Enough

This evidence suggests that node-sprouting occurs at a phrasal level. Hanink (2018a,b) argues specifically that node-sprouting (or dissociation) occurs at DegP. I now turn to arguments against this approach, arguing instead for a generalized XP analysis of node-sprouting.

3.2.2 Against The DegP approach

Hanink (2018a,b) argues that the node-sprouting rule targets a phrase: DegP. Following node-sprouting, she proposes that the inflectional morpheme undergoes Local Dislocation (Embick and Noyer 2001) to affix to the rightmost element of DegP.

(36) a.

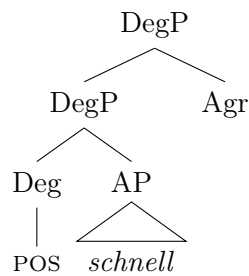


(Hanink, 2018a, 4)

b. Local Dislocation: [[*schnell* * -er]_{deg} * -es] → [*schnell* * -er * -es]

Hanink assumes that adjectives are internal to DegP, with a degree head POS taking a complement AP for positive adjectives (following e.g. Kennedy 1999 among others). The DegP account thus applies not just in the case of comparatives (and superlatives), but also to plain positive adjectives like *schnell* ‘fast,’ which still trigger a node-sprouting rule at the level of DegP.

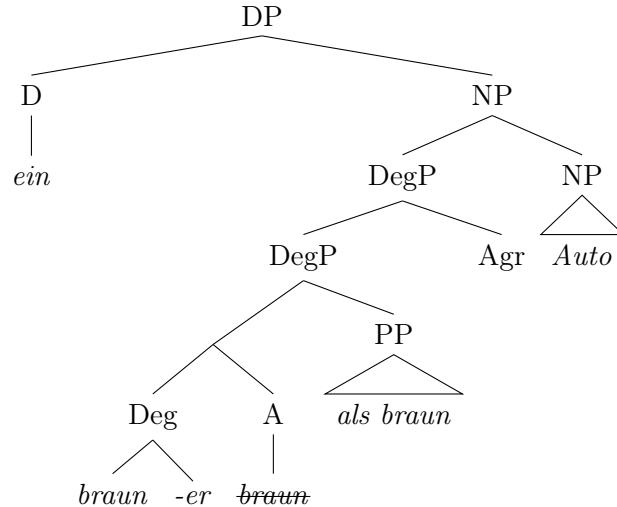
(37)



Hanink’s proposal also captures the Rightmost Generalization. The inflectional morpheme sprouts at the level of the maximal DegP (38); Local Dislocation then puts the inflectional morpheme on the rightmost element of the phrase. Hanink’s proposal reflects the intuition that the inflectional morpheme leans on the entire prenominal phrase.

(38)

(modified from Hanink 2018a, 7)



While elegant, I argue that Hanink’s approach cannot be entirely correct. While assuming projection of Deg is founded for gradable predicates, non-gradable adjectives are not thought to support degree-related structure, yet they too appear prenominally in German. Like gradable adjectives, non-gradable adjectives also appear with inflectional morphology. That these adjectives are non-gradable can be demonstrated by their unwillingness to form comparatives (40), as is shown for ordinals and classificatory adjectives.¹²

- (39) a. der dritt-e Mann
 the third-AGR man
 ‘the third man’
 b. ein technisch-er Architekt
 a technical-AGR architect
 ‘a technical architect’

- (40) a. *der dritt-er-e Mann
 the third-CMPR-AGR man
 b. *ein technisch-er-er Architekt
 a technical-CMPR-AGR architect

One potential fix would be to have two related but distinct node-sprouting rules: one for DegP and one for *a*P (or *a*⁰), the latter of which is responsible for the inflection in (39). However, this solution immediately runs into problems with the comparative forms, because it predicts double node-sprouting: one at *a*P and one at DegP:

¹²Some non-gradable adjectives may form comparatives jocularly, such as *ehemalig-er* ‘former-CMPR’, but this is a type of coercion that does not contradict the main point.

- (41) a. *ein schnell-es-er-es Auto
 a fast-AGR-CMPR-AGR car
 ‘a faster car’ (if dissociation were at a^0)
- b. *ein schnell-er-es-es Auto
 a fast-CMPR-AGR-AGR car

In principle, it would be possible to rule out cases like (41) through a subsequent deletion targeting the word-internal inflectional morpheme, but this seems fairly stipulative. In the next subsection, I motivate an analysis in which all XP modifiers are targeted by node-sprouting.

3.2.3 Analyzing the target of node-sprouting

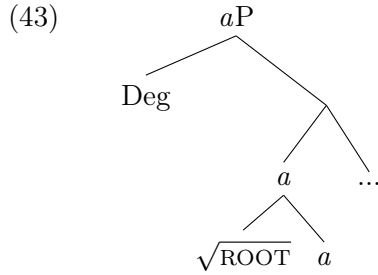
While I will adopt Hanink’s view that the node-sprouting rule is phrasal, I propose instead that the German node-sprouting rule always targets an XP that is left-adjacent to an nP . I will begin with aP and then work my way to XP at the end of the section. The provisional form of the rule is as follows:

- (42) For $aP * nP$, perform R
 R : Adjoin $aInfl$ to aP

The rule in (42) incorporates both the phrasal status of the inflection as well as the linear adjacency conditioning described in Section 3.1.

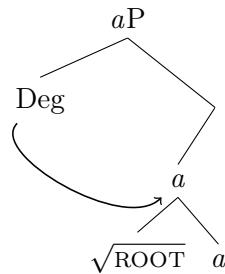
In order to maintain (42), an assumption different from Hanink’s is required with respect to the relation between Deg and a .¹³ I follow the analysis of degree expressions, whereby degree structure appears in the specifier of aP (see Morzycki 2016 and references for discussion of the competing approaches); I assume degree complements are late-merged, following Bhatt and Pancheva 2004. The configuration relevant to affixation is as in (43).

¹³However, note that the phrasal XP analysis is compatible with either option.

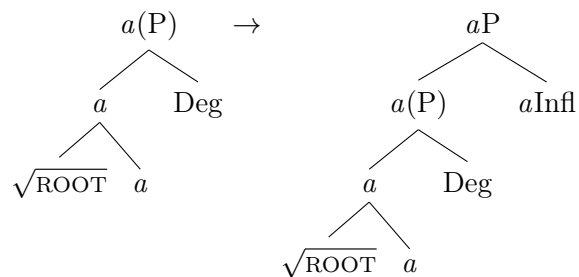


The structural configuration in (43) is sufficient for a postsyntactic rule to apply in the case of synthetic comparatives and superlatives. The rule affixes the *Deg* specifier – which is simultaneously maximal and minimal at this point in the derivation (cf. Matushansky 2006) – to the head *a*. The necessary timing is then that the movement of a *Deg* head ([CMPR]) precedes node-sprouting; this is consistent with what is said in Section 1.3 with respect to the timing of node-sprouting and movement. The order *schnell-er-es* ‘fast-CMPR-AGR’ is thus derived.

(44) a. Movement



b. Node-sprouting



After *aInfl* has been adjoined to *aP*, it will need to move onto the final MWd of the phrase; I adopt the linear displacement (i.e. Local Dislocation) part of the analysis from Hanink 2018a,b, which I assume occurs under concatenation between the adjacent MWds *a* and *aInfl*.¹⁴ The rule can be stated as follows:

¹⁴If the derivation of ‘phrasal inflection’ can occur in two steps – node-sprouting followed by Local Dis-

(45) For $a\text{Infl}$, perform R

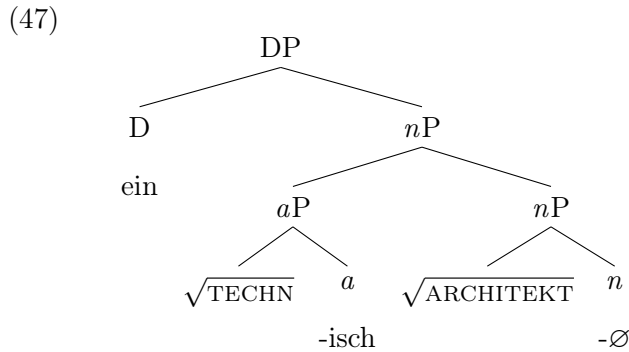
Adjoin $a\text{Infl}$ to a (re-concatenating such that $a\oplus a\text{Infl}$)

The phrasal effects discussed above (such as the one repeated in (46)) are accounted for via node-sprouting at the phrasal level followed by linear displacement of $a\text{Infl}$ to a .

(46) das [so schnell wie möglich-e] Aufräumen
 the so quick as possible-AGR straightening-out
 ‘a quick-as-possible straightening out’ (Roehrs, 2006, 222)

The target of node-sprouting is an entire phrasal modifier linearized to the left of another $n\text{P}$; after node-sprouting, the inflectional morpheme docks onto the final MWd in the modifier.

I now demonstrate the basic mechanics using a non-gradable adjective in the expression *ein technischer Architekt* ‘a technical architect.’ The syntax of this expression can be simplified as follows (with some of the exponents provided for clarity):



A linearization of the syntactic structure containing the $a\text{P}$ and the $n\text{P}$ will produce (48), where the operator $*$ encodes ‘is left-adjacent to’ (Embick, 2007b); MWds are concatenated with MWds (indicated by \frown), and SWds are concatenated with SWds (indicated by \oplus). The condition for node-sprouting will be satisfied at the point where the $*$ operator applies, encoding the left adjacency of the $a\text{P}$ modifier.

location – then in principle, it should be possible to perform the first without the second, resulting in a dissociated morpheme that constitutes its own MWd. This may occur for what is often referred to as ‘particles’; I leave the issue to future research.

$$(48) \quad [[\sqrt{\text{TECHN}} * a] * a\text{Infl}]_{aP} * [\sqrt{\text{ARCHITEKT}} * n]_{nP}$$

Concatenation then produces (49), at which point, the movement operation causes $a\text{Infl}$ to become part of the same MWd as a .

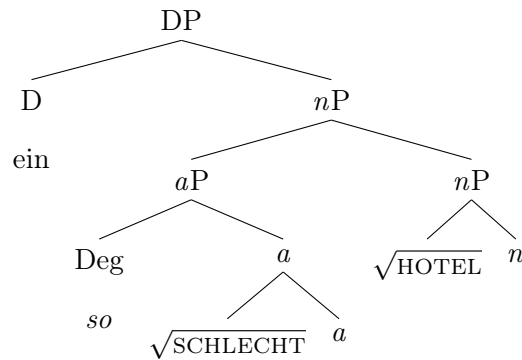
$$(49) \quad [[\sqrt{\text{TECHN} \oplus a}]_a \frown a\text{Infl}] \rightarrow (\sqrt{\text{TECHN} \oplus a}), (a \oplus a\text{Infl})$$

Degree expressions will work the same way. For the postsyntactic movement of Deg to a , Deg adjoins to a , and therefore a projects for the resultant complex head. This was illustrated above for Deg lowering to a^0 (44). It will therefore constitute an appropriate target for local dislocation of $a\text{Infl}$ onto a .

We thus derive the fact that the inflection applies outside of the comparative morpheme. We similarly derive the single application of the inflection when the degree expression is analytic (50), as the node-sprouting rule will again only affect the MWd headed by a :

- (50) a. ein so(*-es) schlecht*(-es) Hotel
 a so bad hotel
 ‘so/as bad a hotel’ (Hanink, 2018a, 94)

b.



- c. [so * schlecht]_{aP} * nP

We also derive the fact that the node-sprouting rule disregards any internal complexity of the modifier. For example, adverbial modification will have no effect on the number of inflectional nodes, as reflected in (51), which bears just one. This is because no segment of aP will be defined by * adjacency with nP .

- (51) eine [so wahrhaft unglaublich umwerfend schön-e] Katze
 a [so truly unbelievably staggeringly beautiful-AGR] cat

Several further predictions come out of the current account. First, as is well-known, for a series of prenominal adjectives, all of them are inflected:

- (52) a. dieser schön-e groß-e Garten
 this nice-AGR big-AGR garden
 ‘this nice big garden’
 b. gut-es bayrisch-es Bier
 good-AGR Bavarian-AGR beer
 ‘good Bavarian beer’ (Durrell, 2002, 130)

This comes out naturally from the assumptions that i) *aP* is adjoined to *nP* and ii) linearization statements are generated between adjuncts and the segments to which they adjoin. Node-sprouting should thus occur on every modifier, since left-adjacency holds between *aP* and *nP* for each.¹⁵

- (53) [[gut]_{aP} * [[bayrisch]_{aP} * [Bier]_{nP}]_{nP}]_{nP}

A further prediction is that any postposed degree material following the noun will be uninflected, while the remnant prenominal material will bear inflection. The reason this is predicted is that node-sprouting targets the whole modifier, and the dislocation of the agreement affix onto an adjacent adjective is insensitive to the postnominal material, adjoining to whatever the derived right edge of the modifier is. This is also borne out:

- (54) a. ein [so gelb(*-es) wie möglich*(-es)] Auto
 a so yellow-AGR as possible-AGR car
 ‘a yellow as possible car’

¹⁵Interestingly, it is reported that the literary language permits non-final prenominal adjectives to remain uninflected (Durrell, 2002, 131), a fact that is not discussed much in the theoretical literature. This pattern deserves further research.

- (i) seine **hochrot** abstehend-en Ohren
 his deep.red protuberant-AGR ears
 ‘his deep-red, protuberant ears’ (modified from Durrell 2002, 131)

- b. ein [so gelb*(-es)] Auto wie möglich(*-es)
 a so yellow(-AGR) car as possible(-AGR)
 ‘a yellow as possible car’

The third prediction involves a derivational trapping situation. While evidence like (54) and the evidence discussed in Section 3.2.1 demonstrate that it is possible to have postadjectival degree material, not just any type of degree material should be permitted. In particular, the rule that displaces *aInfl* specifies that it must be on an adjective. This reflects the intuition that it is adjectival inflection.

If node-sprouting is executed on a phrase with this degree expression, the dislocation of *aInfl* onto the adjacent MWd should cause a crash if the final element is not an adjective. This turns out to be correct; compare (55-a), which indicates that this type of comparison is grammatical when the degree complement appears postnominally, with (55-b), where the prenominal degree complement ending in a noun is ungrammatical.¹⁶

- (55) a. *Man findet keine [intelligent-er als sie(-e)] Katze.
 one finds no intelligent-CMPR than her(-AGR) cat
 ‘One does not find a more intelligent cat than her.’
 b. Man findet keine [intelligent-er-e] Katze als sie.
 one finds no intelligent-CMPR-AGR cat than her
 ‘One does not find a more intelligent cat than her.’

A further issue concerns the locality of * adjacency. This becomes relevant for predicative adjectives, which are never inflected. Crucially, if a predicative adjective precedes a nominal because it is moved, as in the embedded interrogative in (56), it lacks inflection, despite it appearing next to a noun.

- (56) Ich weiß, wie laut(*-e/*-en) Leute sein können.
 I know, how loud(-AGR) people be can
 ‘I know how loud people can be.’

The reason for this is that a direct * relation does not hold between the adjectival phrase

¹⁶See Broekhuis 2013, Ch.5 for one view on a related issue in Dutch.

and the nP ; they belong to different constituents which are linearized with respect to each other: $aP * [\dots [DP]]$. Consequently, the node-sprouting rule is not triggered.

To summarize so far, a phrasal analysis of node-sprouting at the level of aP succeeds at capturing the basic distribution of adjectival inflection. However, refinements of the phrasal analysis are necessary, given the structural issues for prenominal adjectives that were addressed in Section 3.1.

Refining the phrasal node-sprouting analysis: XPs

One potential problem with the account concerns the status of ‘indirect modifiers’, if we assume with Cinque (2010, 2014) that these adjectives are embedded in a reduced relative clause (as in (57)). The issue is that, if the adjectives are embedded within a relative clause, we do not have a direct $aP * nP$ relation, but rather, a $*$ adjacency relation between some other type of clausal XP and nP .

- (57) Ich habe jeden möglich*(-en) Kandidaten interviewt.
 I have every possible(-AGR) candidate interviewed
 ‘I have interviewed every candidate that it was possible to interview’ (cf. ‘I have interviewed every potential candidate’)

To accommodate the data from indirect modification, I propose that the node-sprouting rule targets whatever XP is left-adjacent to nP . This excludes e.g. possessors, which by assumption have raised from $specnP$ to $specDP$ (following the classical analysis from Abney 1987), and are therefore not in a local $*$ relation with nP . But this includes anything – which may or may not be of category a – that is an nP adjunct, such as reduced relative clauses. The final version of the rule is as in (58):

- (58) For $XP * nP$ (X of any category), perform R
 R : Adjoin $aInfl$ to XP

While this rule has become generalized, the Local Dislocation operation which displaces

aInfl onto an adjective will remain the same, thus capturing the categorial inflexibility of its attachment, which was discussed above.

To summarize so far, a node-sprouting rule targets an attributive phrase that is linearized to the left of *nP*; subsequently, *aInfl* is moved onto an adjacent MWd *a*. Among other things, this captures i) the phrasal property of inflection, ii) the insensitivity to whether the adjective is gradable, and iii) the insensitivity to whether the inflection targets an indirect or direct modifier.

One last refinement concerns coordinate phrases. As discussed by Hanink (2018a,b), coordinated attributives must all be inflected; they are thus *prima facie* counterexamples to the Rightmost Generalization.

- (59) ein [alt*(-es) und wichtig-es] Buch
 an old(-AGR) and important(-AGR) book
 ‘an old and important book’ (Hanink, 2018a, 8)

This looks like a type of ATB effect (see Embick 2007a; Kramer 2010, among others for discussion of ATB effects for morphological operations, as well as Section 4.2). To address this issue, I adopt the basic idea from Hanink 2018a,b (though differ somewhat in details). Following Kramer (2010), coordinated elements are linearized with respect to each other at the very late stage of *chaining* (in the sense of Embick 2003), where the conjuncts are ‘pulled apart’. This means that coordinated elements will be processed in parallel up until this point, and will thus be active at the same time for operations involving previous computations for linearization, including concatenation. At the point of node-sprouting, adjacency between the modifier and *nP* only produces one adjoined agreement morpheme *aInfl*. However, at the point of linear displacement of *aInfl* to the conjuncts, *aInfl* is MWd-concatenated with both adjectives, and therefore applies to both ATB:

- (60) $\left[\begin{array}{c} alt \\ wichtig \end{array} \right] \frown aInfl$

An extension of the coordinate structure analysis can be applied to a construction that

has been described by von Fintel and Kratzer (2014) as a metalinguistic comparative. The metalinguistic comparative conjoins two adjectives with the word *eher* ‘earlier, rather’ (von Fintel and Kratzer, 2014).¹⁷ It is possible to use this metalinguistic construction as an attributive, in which case, both adjectives are inflected. Recall that, in contrast, similar comparatives do not inflect the first adjective (63).

- (61) Mein Auto war eher langsam als schnell.
 My car was more slow than fast
 ‘My car was more on the slow side than on the fast side.’

(von Fintel and Kratzer, 2014, 176)

- (62) das eher langsam*(-e) als schnell*(-e) Auto
 the more slow(-AGR) than fast(-AGR) car
 ‘the car more on the slow side than the fast side’

- (63) ein [so lang wie breit-er] Tisch
 a [so long how wide-AGR] table
 ‘a table as long as it is wide’

More research should be conducted on this construction; my tentative suggestion is that this construction is structurally like coordination, accounting for its shared behavior of inflecting both adjectives in the modifier.

While typical coordinated expressions receive inflection on each modifier, idiomatic coordinated expressions only receive inflection only on the rightmost modifier. This can be observed in the contrast between (64-a), which coordinates two modifiers compositionally, and (64-b), where the attributive is idiomatic. Note that the idiom is not completely well-formed as an attributive expression; nevertheless, the contrast is clear.

- (64) a. dieser [fix*(-e) und fertig-e] Mann
 this quick-AGR and ready-AGR man
 ‘this quick and ready man’
 b. ??dieser [fix(*-e) und fertig-e] Mann
 this quick(-AGR) and ready-AGR man
 ‘this burnt-out man’

¹⁷For more on metalinguistic comparatives, see Embick 2007a.

This pattern can be made sense of if the coordinated expression is a type of compound whose conjuncts are merged with each other in the same ‘plane’ (as opposed to the ‘parallel planes’ of standard coordination). In this case, the idiom’s internal elements are linearized with respect to each other like other syntactic elements, and only the rightmost adjective is concatenated with the noun. These idioms thus follow the Rightmost Generalization.

In sum, the node-sprouting rule for German adjectives applies to prenominal adjuncts to *nP*, and a dislocation operation then moves *aInfl* to the adjacent MWd. The rule does not apply to postnominal adjectives or to predicative adjectives because in these cases, the conditions are not met.¹⁸

In this section, I advanced a phrasal analysis of node-sprouting for German adjectival inflection, where prenominal adjunct phrases that are linearly adjacent to *nP* receive inflection. In the next subsection, lexical exceptions such as *sexy* ‘sexy’ and *lila* ‘purple’ are considered, and an analysis with deletion (radical impoverishment) is developed for deriving their exceptionality. In the section that follows, I show how these exceptions cause a derivational trapping situation for noun phrase ellipsis (NPE).

3.3 Exceptionally Inflectionless Adjectives

This subsection explores the distribution of exceptionally inflectionless adjectives in German. I propose that EI adjectives are derived through deletion of their inflectional node under Subword concatenation, accounting for the linear dimension of their exceptionality. This will form the foundation for the following subsection, where I advance a derivational trapping analysis of the defectivity of EI adjectives in NP ellipsis.

German has a set of adjectives that are exceptional in that they do not decline when

¹⁸One question that remains is why German speakers would choose a phrasal analysis over an alternative MWd analysis of prenominal inflection, given that the evidence that teases the two options apart (such as complex postadjectival degree expressions) is potentially sparse in a child’s input. One speculation is that speakers treat the non-existence of allomorphy based on declension class as a cue that inflection enters the derivation ‘far away’ from the adjective. However, if Local Dislocation occurs prior to Vocabulary Insertion, then there is no mechanical reason why the agreement morpheme should be insensitive to its host. I leave this to future research.

they occur as prenominal adjectives (Muysken and van Riemsdijk 1986; Roehrs 2015; Murphy 2018; among many others), including *lila* ‘purple’ and *rosa* ‘pink’. The indeclinable adjectives that are most frequently discussed in the theoretical literature are *lila* and *rosa*, though there are others such as *sexy* ‘sexy’ and *creepy* ‘creepy’. *Lila* and *rosa* have the special property – not shared by all indeclinables – that they can appear with an additional morpheme *-n-*, which I gloss as LINK. In prenominal position, if these adjectives occur with LINK, they must appear with an agreement suffix (66-a). The linking morpheme *-n-* does not occur on bare predicative adjectives (66-b), but does occur with synthetic comparatives and can occur with superlatives (67), suggesting it is present to ‘host’ suffixes.

- (65) a. ein gelb*(-es) Kleid
a yellow(-AGR) dress
‘a yellow dress’
- b. ein lila(-n-es) Kleid
a purple(-LINK-AGR) dress
‘a purple dress’
- (66) a. ein lila*(-n) Kleid
a purple-LINK dress
‘a purple dress’
- b. Das Kleid ist lila(*-n).
The dress is purple(-LINK)
‘The dress is purple.’
- (67) Das Kleid ist lila-n-er / am lila(-n)-st-en.
The dress is purple-LINK-CMPR / to.the purple-LINK-SPRL-AGR
‘The dress is more purple / the purplest.’

The exceptionality of *lila* is not retained in suffixed forms like the comparative. In prenominal position, the comparative of *lila* must bear inflection like other adjectives.

- (68) ein lila-n-er*(-es) Kleid
a purple-LINK-CMPR-AGR dress
‘a purpler dress’

Sexy behaves similarly, except that there is no corresponding form with LINK. Comparatives and superlatives are possible (without any LINK), and agreement becomes obligatory when e.g. the comparative is used.

position, it is either a bare form *lila* ‘purple’ or e.g. *lila-n-e* ‘purple-LINK-AGR’.²³ Crucially, this rule applies *before* the deletion rule in (71). Consequently, *-n-* can be inserted, in which case it will linearly intervene between a root and *aInfl*. In this case, the conditions on deletion will not be met; thus prenominal forms with the *-n-* linking morpheme will necessarily be inflected (**lila-n*).

The exceptionality is also strictly linearly local in that it cannot make a whole phrase that it is part of inflectionless. This is illustrated with degree expressions.²⁴ As we saw in Section 3.2.1, complex degree phrases of the type in (76-a) can be prenominal, in which case only the rightmost adjective receives inflection. When *lila* is part of the degree phrase, inflection is obligatory when *lila* is not the rightmost element (76-b).²⁵²⁶

- (76) a. ein so gelb wie möglich*(-es) Auto
 a so yellow as possible-AGR car
 ‘a car that is as yellow as possible’
- b. ein so lila wie möglich*(-es) Auto
 a so purple as possible-AGR car
 ‘a car that is as purple as possible’

With respect to the surrounding context, for some speakers, *lila* does not actually need to be immediately adjacent to the noun to remain uninflected; another adjective may intervene (77). Relatedly, some speakers allow *lila* to be coordinated, such that it is not adjacent with the head noun (78).

- (77) a. ein Zweig der gelb*(-en) unbekanntem Blumen
 a branch the.GEN.F.PL yellow(-AGR) unfamiliar flowers
 ‘a branch of yellow, unfamiliar flowers’

²³I assume something phonological is at play for deriving the preferences in the comparative and superlative (e.g. *lila-n-er* ‘purple-LINK-CMPR’). I set this issue to the side.

²⁴The ability of *lila* to appear in degree constructions also supports its adjectival status. Thus the alternative analysis, in which *lila* is not inflected because it is nominal, is not supported.

²⁵See Footnote 33 for discussion of the discontinuous degree phrase version of (76-b).

²⁶Dave Embick (p.c.) points out that data like (76-b) are likely problematic for Lexicalist accounts, given how percolation of information about exceptionality is supposed to occur. I leave a deeper study of the differences between Lexicalist and DM accounts of exceptional inflectionlessness to future research.

- b. ein Zweig der lila(-n-en) unbekanntes Blumen
 a branch the.GEN.F.PL purple(-AGR) unfamiliar flowers
 ‘a branch of purple, unfamiliar flowers’
- (78) a. ein schwarz*(-es) und weiß-es Tier
 a black(-AGR) and white-AGR animal
 ‘a black and white animal’
- b. ein lila(-n-es) und weiß-es Tier
 a purple(-LINK-AGR) and white-AGR animal
 ‘a purple and white animal’

Notably, unlike *lila* and *rosa*, other EI adjectives such as *sexy* have no inflected counterparts. That is, there are no inflected forms **sexy-e/-er/-es*.²⁷ This will become more relevant below in the discussion of ungrammatical cases of noun phrase ellipsis.

To summarize this section so far, German has exceptionally inflectionless adjectives where the exceptionality should be defined in linear terms. Under this view, node-sprouting occurs as defined in the previous subsection without qualification. It is only after *aInfl* is displaced onto the adjacent MWd when the agreement morpheme *aInfl* is adjacent to an exceptional root such as *lila* or *sexy*; *aInfl* is then deleted.

A more complex case of indeclinability A more complex case comes from adjectives with the ‘origin’ suffix *-er*, which has not received much attention (though see Broekhuis 2013 on parallel cases in Dutch). These adjectives are associated with place names of origin or association, and include examples such as *Berlin-er* ‘of/from Berlin’, *Florentin-er* ‘of/from Florence’, and *Schweiz-er* ‘of/from Switzerland’.

- (79) ein Florentin-er(*-es)/Berlin-er(*-es) Museum
 a Florence-ER(-AGR)/Berlin-ER(-AGR) museum
 ‘a Florentine/Berlin museum’

Not all origin adjectives are indeclinable. Many of them use the adjectival suffix *-isch*, which

²⁷It is important to note that there is nothing phonologically ill-formed about potential agreement forms with e.g. *sexy*. This is clearly illustrated for the comparative form *sexy-er* ‘sexy-CMPR’, which is phonologically identical to the potential (but non-existent) strong form of the masculine, singular, nominative **sexy-er*.

is not limited to place names (e.g. *metaphor.isch* ‘metaphorical’). *-isch* adjectives are always declinable.²⁸

- (80) das russ.isch*(-e) Museum
 the Russian(-AGR) museum
 ‘the Russian Museum’

Corresponding to the *-er* adjectives are a class of nouns also suffixed with *-er*, though they differ in terms of their other morphology. While the noun can take on feminizing morphology, the adjective cannot (81). Furthermore, the noun refers to humans – while the adjective has no such human restriction (as indicated by (79)).²⁹ The difference in human interpretation in particular makes it unlikely that the adjectival version is actually a compounding noun; otherwise (79) should not be possible. Further support for the adjectival status of origin adjectives comes from their ability to be coordinated with other inflected adjectives (82).^{30,31}

- (81) a. eine Schweiz-er(*-in) Frau b. eine Schweiz-er*(-in)
 a Swiss(-FEM) woman a Swiss-ER-FEM
 ‘a Swiss woman’ ‘a Swiss woman’

- (82) (?)Ich will ein Schweiz-er(*-es) oder amerikan.isch-es Auto
 I want a Swiss-ER(-AGR) or American-AGR car
 ‘I want a Swiss or American car.’

²⁸The *-er* adjectives often have corresponding *-isch* adjectives, including *florentin-isch* and *berlin-er-isch*.

²⁹There are lexical exceptions where an ‘origin’ *-er* noun can refer to inanimates, such as *Berliner* (a type of doughnut); for these exceptions, the meaning is specific. Thus the point remains that these nouns cannot refer to any possible object from the place identified by the origin term; a *Schweizer*, for example, cannot refer to a table from Switzerland.

³⁰My consultants report that it is more felicitous to use the corresponding *-isch* form of *Schweiz-er*, but (82) is not ungrammatical.

- (i) ein schweiz-er-isch-es oder amerikan-isch-es Auto
 a Swiss-ER-ISCH-AGR or American-ISCH-AGR car
 ‘A Swiss or American car’

³¹One diagnostic that might suggest that they are not true adjectives is that they cannot form comparatives: (**Schweiz-er-er* ‘Swiss-ER-CMPR). However, I would contend that this diagnostic merely reflects that these adjectives are not actually gradable. This is known to be generally true of ethnic/origin adjectives (e.g. Arsenijević et al. 2010, Matushansky 2013, among others).

One further piece of evidence indicates that origin adjectives are not part of nominal compounds. If they were nouns that formed compounds with the head noun, we would expect them to have to be adjacent, with no intervening adjectives. But this is not the case, as demonstrated in (83), in which a classificatory adjective (which bears adjectival inflection) intervenes between an *-er* adjective and the head noun.

- (83) der Hamburg-er/Berlin-er/Schweiz-er technisch-e Architekt
 the Hamburg-ER/Berlin-ER/Switzerland-ER technical-AGR Architect
 ‘a technical architect from Hamburg/Berlin/Switzerland’

I conclude that *-er* origin modifiers are also indeclinable adjectives, which are subject to the same radical impoverishment operation as the previously discussed examples. It is worth noting that, like *sexy* but unlike *lila*, these adjectives have no corresponding inflected forms. This will also be relevant in the next section.

This section illustrated the basic properties of exceptionally uninflected adjectives including *lila* and *sexy*, demonstrating the linear character of their exceptionality. The next section explores the defective distribution of these nouns, offering novel evidence that supports the generalization that noun phrase ellipsis is generally impossible with EI adjectives in German.

3.4 Exceptional Inflectionlessness and Defectivity

The evidence presented so far is compatible with several analyses of the inflectionlessness of *lila*, *sexy*, etc., including $-\emptyset$ allomorphy, radical impoverishment, and others. One potential reason that a \emptyset allomorphy analysis has not been pursued (to my knowledge) is that *lila* displays a surprising syntactic defect in noun phrase ellipsis (NPE) environments (see Muysken and van Riesdijk 1986; Saab and Lipták 2016; Murphy 2018; among others), which would be difficult to account for.

- (84) 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.' (Murphy, 2018, 339)

In this section, I provide confirmatory evidence from various types of elliptical environments that NPE is disallowed with exceptionally inflectionless adjectives. I provide a derivational trapping analysis for the grammar of some speakers, and a compounding analysis for others. In essence, the derivational trapping analysis takes EI adjectives to form a relationship with a linearly neighboring inflected element; in NPE, the EI element identifies an elided noun as a potential target but cannot successfully establish the relationship with the elided noun. The analysis makes correct predictions about possible and impossible expressions with EI adjectives in coordinated and stacking environments with NPE.

Before proceeding, I want to dispel a reader's speculation that all speakers treat these elements as compounding, accounting for their inability to appear in NPE. For some speakers, EI elements like *sexy* and *lila* distribute syntactically like attributive adjuncts; several pieces of evidence suggest this. First, some speakers allow *lila* and *sexy* as intensified prenominal adjectives (cf. *ein sehr gelb-es Auto* 'a very yellow-AGR car') (85). Second, these adjectives enter into different types of degree constructions, including complex discontinuous degree constructions like that of (86); observe that they remain inflectionless in this environment.³²

- (85) a. ein (sehr) sexy Duft
 a very sexy scent
 'a very sexy scent'
- b. ein (sehr) lila??(-n-es) Auto
 a very purple(-LINK-AGR) car
 'a very purple car'
- (86) a. eine so schön-e Blume wie Lavendel
 'a so beautiful-AGR flower as lavender
 'as beautiful a flower as lavender'

³²For *lila*, speakers report that it is degraded compared to the inflected version, though *sexy* is acceptable. My speculation is that there is some type of competition effect causing the degradation.

- b. eine so lila(-n-e) Blume wie Lavendel
 a so purple-LINK-AGR flower as lavender
 ‘as purple a flower as lavender’
- c. ein so sexy Duft wie Lavendel
 a so sexy fragrance as lavender
 ‘as sexy a fragrance as lavender’

As discussed in the previous section, EI adjectives may also be coordinated with inflected adjectives (87) and can be separated from the noun by an intervening adjective (88). The evidence thus strongly indicates that a compounding analysis is not viable for a large segment of speakers, all of whom reject EI adjectives in NPE environments.

- (87) ein lila(-n-es) und weiß-es Tier
 a purple(-LINK-AGR) and white-AGR animal
 ‘a purple and white animal’
- (88) ein Zweig der lila*(-n-en) unbekannt-en Blumen
 a branch the.GEN.PL purple(-LINK-AGR) unfamiliar-AGR flowers
 ‘a branch of purple, unfamiliar flowers’

These tests establish that EI adjectives are indeed modifiers. Could inflectionless elements belong to a different syntactic category, accounting for their defectivity? We might, for example, expect that inflectionless elements are treated as prepositions due to their shared lack of inflection. However, prepositions can be stranded in NPE just like adjectives, so the prepositional analysis is not viable.

- (89) Wenn ich nur ein Buch hätte, dann doch eines ~~ein~~ von Hermann Hesse.
 If I only one book read, then PTC one from Hermann Hesse
 ‘If I only read one book, I would rather it be one by Hermann Hesse.’

In the next subsection, I solidify the empirical generalization that NPE is ungrammatical with EI adjectives by providing novel evidence from various syntactic environments.

3.4.1 *NPE with exceptionally inflectionless adjectives

Discussion in Section 3.3 addressed the issue of morphosyntactic context around *lila* in the examination of its exceptionality. Interestingly, debates about the exceptionality of EI adjectives have centered on *lila* and have been solely focused on the interaction between its inflection and NPE. In this subsection, I show for a wider range of elements that the generalization holds that NPE is prohibited with EI adjectives, and show that this holds across a variety of elliptical environments.

As has been observed, while inflection on *lila* is generally optional, it becomes obligatory for *noun phrase ellipsis* (NPE). One prominent view, represented by Lobeck (1995) (among others), is that ellipsis is licensed by inflection (cf. Saab and Lipták 2016 for discussion). As a consequence, if the inflection is absent on *lila*, then the ellipsis cannot be licensed, yielding ungrammaticality. Because *lila* has an agreeing version, it is this form that is necessary for NPE.

- (90) 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.' (Murphy, 2018, 339)

While inflection of *lila* is often described as being obligatory with ellipsis, to my knowledge, this has not been heretofore conclusively demonstrated. I provide novel evidence from several types of NPE constructions that confirm the pattern. First, inflection on *lila* is obligatory with an elided noun in a *wh*-phrase (even when the adjective is not focused), as in (91).

- (91) Hier sind zwei lila Kleider. Welches lila*(-n-e) magst du?
Here are two purple dresses. Which purple*(-LINK-AGR) like you?
'Here are two purple dresses. Which purple dress do you like?'

Second, it is possible to strand an adjective in split topicalization, which has been analyzed as involving ellipsis (see Ott 2011 and references therein). The stranded adjective must be inflected, even when it is *lila*.

- (92) a. Rauch mag ich schwarz*(-en).
 smoke like I black-AGR
 ‘As for smoke, I like black smoke.’
- b. Rauch mag ich lila*(-n-en).
 smoke like I purple*(-LINK-AGR)
 ‘As for smoke, I like purple smoke.’

Third, quantified or indefinite pronouns with postnominal adjectives require inflection on *lila* (Roehrs, 2008, 12). This is consistent with the generalization; see Roehrs (2008) for evidence that such pronouns include a low, unpronounced noun (to which the adjective is ‘prenominal’). Also note that the inflection on *lila* with unpronounced nouns is obligatory in definite DPs (95-a).

- (93) Etwas/Nichts Lila*(-n-es)
 something/nothing purple(-LINK-AGR)
 ‘something purple/nothing purple’

(94) (I’ve seen many flowers but...)

- a. Ich habe nie eine so lila*(-n-e) gesehen.
 I have never one so purple(-LINK-AGR) seen
 ‘I’ve never seen one so purple.’

(95) (Here are two dresses: the first is black and the second is purple. Which one do you want?)

- a. ...Ich will das lila*(-n-e).
 ...I want the purple(-LINK-AGR)
 ‘I want the purple dress.’

Fourth, names or appellations such as *Alexander der Groß-e* ‘Alexander the Great-AGR’ require inflection on *lila*. The adjectives in these constructions are clearly adjectives in that they bear inflection and can be modified by intensifiers (though intensification makes it jocular).

- (96) Alexander der (sehr) Groß-e
Alexander the (very) great-AGR
'Alexander the (very) Great'
- (97) Alexander der Lila*(-n-e)
Alexander the purple(-LINK-AGR)
'Alexander the Purple'

The incompatibility of NPE with indeclinable adjectives is not limited to *lila*. This is shown for *sexy* (98). Like uninflected *lila*, *sexy* is ungrammatical with indefinite pronouns (98-b), with split topicalization (98-c), and cannot occur in naming constructions (98-d). Unlike *lila*, *sexy* has no inflected counterpart (**sexy-e*, **sexy-en*, etc.), and is thus altogether impossible in these environments.

- (98) a. Wenn ich eine Stimme hätte, dann doch eine schön-e/*sexy.
If I a voice have.SBJ, then PTC a beautiful-AGR/sexy
'If I had a voice, I would rather have a sexy one.' (written by a mute)
- b. etwas Schön-es/*Sexy
something beautiful-AGR/*sexy
'something beautiful/sexy'
- c. Stimmen mag ich schön-e/*sexy.
voices like I beautiful-AGR/*sexy
'As for voices, I like beautiful/sexy ones.'
- d. *Alexander der Sexy
Alexander the sexy
'Alexander the Sexy'

The same can be illustrated for *-er* adjectives (99-a). Like uninflected *lila*, it is impossible for them to appear postnominally with an indefinite pronoun (99-b), and they are also ungrammatical with split topicalization (99-c). Because they are not gradable, we do not expect them to appear in complex degree constructions.

- (99) a. Hier sind zwei Schweiz-er Filme. *Welchen Schweiz-er sehen wir an?
Here are two Swiss-AGR films. Which Swiss-ER see we at
'Here are two Swiss films. Which Swiss film are we watching?'

- b. *etwas Schweiz-er
something Swiss-ER
'something Swiss'
- c. *Kirchen mag ich Florentin-er(-e).
Churches like I Florentine-ER(-AGR)
'As for churches, I like Florentine ones.'

It has been demonstrated in this section that various NPE environments are ungrammatical with exceptionally inflectionless elements. While there is some speaker variation discussed in the next section with respect to other diagnostics, I have not found variation among speakers for the NPE environments discussed in this subsection.

The incompatibility of NPE with indeclinable adjectives would be mysterious if their lack of inflection was due to $-\emptyset$ allomorphy. Assuming elliptical deletion occurs prior to Vocabulary Insertion, a zero-realized $a\text{Infl}$ should look like any other $a\text{Infl}$; thus NPE would not be expected to display any sensitivity to its zero realization.

Previous work has highlighted specifically the ungrammaticality of *lila* in NPE environments, contrasting it with its inflected counterparts (e.g. *lila-n-ne*). However, it is worth stressing that an adjective like *sexy*, which has no inflected counterpart, is still ungrammatical with NPE. This more clearly indicates that the badness of NPE cases is not due to some type of competition with a generable inflected form. Rather, the ill-formedness is due to the combination of inflectionlessness with NPE.³³

The following table lists the NPE environments that are ungrammatical with exception-

³³One underexplored observation is that, for discontinuous degree expressions with *wie möglich* 'as possible' (i-b), inflection on *lila* turns out to be obligatory. Note that this is unlike the discontinuous equative-like expression from (74), repeated in (ii), which is grammatical with uninflected *lila* (as well as *sexy*). It is not obvious how this construction would involve NPE. I leave this issue to future research.

- (i) a. ein so gelb*(-es) Auto wie möglich
a so yellow(-AGR) car as possible
'a yellow as possible car'
- b. ein so lila*(-n-es) Auto wie möglich
a so purple(-LINK-AGR) car as possible
'a purple as possible car'
- (ii) eine so lila(n-e) Blume wie Lavendel
a so beautiful(-LINK-AGR) flower as lavender
'as beautiful a flower as lavender'

ally inflectionless elements in German.

(100)

NPE environment	Grammatical?
Unfocused in <i>wh</i> -nominal	✗
Split Topicalization	✗
Quantified/indefinite pronouns	✗
Naming construction	✗

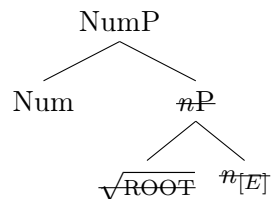
In the next subsection, I provide an analysis of the ungrammaticality of exceptionally inflectionless adjectives in NPE environments.

3.4.2 What goes wrong in NPE

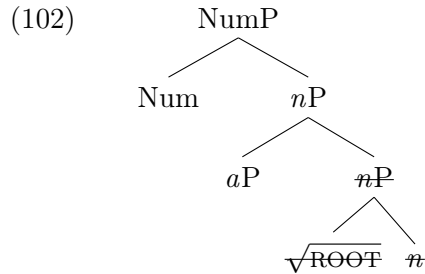
The analysis of NPE and exceptionally inflectionless elements is complicated by previously unrecognized variation. While the speakers I have consulted share the judgments reported in the previous subsection, other points of variation indicate that speakers diverge in their analyses of EI elements. While a compounding analysis seems appropriate for one grammar, it is evidently inappropriate for others. For the latter type of speakers, I offer an analysis in terms of derivational trapping; the particulars of the account are closely related to the analysis that is provided for other phenomena from BCS in Sections 2.3 and 2.4.

I assume that ellipsis is triggered by an [E] feature on a head (Merchant 2001). While many theories of ellipsis assume that the [E] feature licenses the deletion of the head's complement, I adopt the mechanics of Landau (to appear) : the deletion applies to a maximal projection of the head bearing the feature [E]. For the relevant type of German NPE, I assume [E] is on *n* and triggers ellipsis of *n*P.

(101)



The reason I adopt this analysis is that stranding *nP* adjuncts becomes straightforward if segments can be elided. What this means is that *aP*s adjoined to *nP* need not be elided in NPE, because they are adjoined to maximal projections of *nP*, whose segments can be the target of ellipsis.



In the following subsections, I offer two analyses of the elliptical defectivity of EI adjectives, accounting for the two types of speakers who analyze EI adjectives differently. The first analysis is for compounding speakers, while the second one is for speakers whose NPE morass comes in the form of a derivational trap.

Compounding Speakers

While all of my consultants find the NPE examples unacceptable, there is some variation in what speakers accept outside of these constructions. One of my consultants requires the adjective to be linearly adjacent to the noun.

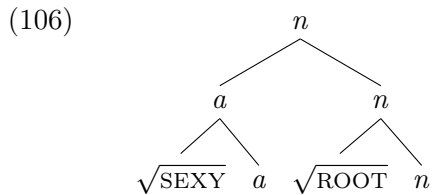
- (103)
- | | | | | | |
|----|--|--------|--------------|-------------------|---------------------------|
| a. | ein Zweig | der | unbekannt-en | lila(-n-en) | Blumen |
| | a | branch | the.GEN.PL | unfamiliar-AGR | purple(-LINK-AGR) flowers |
| b. | ein Zweig | der | lila*(-n-en) | unbekannt-en | Blumen |
| | a | branch | the.GEN.PL | purple(-LINK-AGR) | unfamiliar-AGR flowers |
| | 'a branch of purple, unfamiliar flowers' | | | | |
| c. | ein Zweig | der | gelb-en | unbekannt-en | Blumen |
| | a | branch | the.GEN.PL | yellow-AGR | unfamiliar-AGR flowers |
| | 'a branch of yellow, unfamiliar flowers' | | | | |
- (104)
- | | | | |
|----|--------------------|-----------------|----------------|
| a. | ein interessant-er | sexy | Duft |
| | an | interesting-AGR | sexy fragrance |

- b. *ein sexy interessant-er Duft
 a sexy interesting-AGR fragrance
 ‘a sexy, interesting fragrance’

It is still clear enough that this speaker uses these roots in adjectival contexts, as is evident from intensified predicative adjectives (105). Further evidence also comes from the ability of these adjectives to form comparatives (*sexy-er* ‘sexier’, *lila-n-er* ‘more purple’).

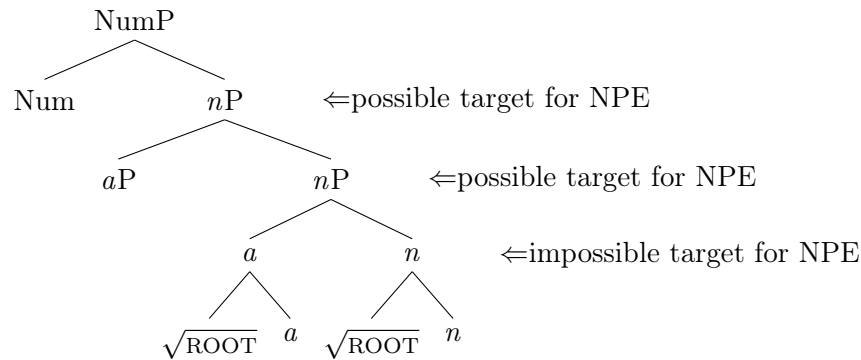
- (105) Das ist sehr sexy/lila.
 that is very sexy/purple’
 ‘That is very sexy/purple.’

I propose that this (type of) speaker represents uninflected prenominal adjectives as part of nominal compounds, as in the head-adjoined structure in (106) (see Harðarson 2018 and references for a head-merging analysis of compounding). The German node-sprouting rule operates on phrasal modifiers and not compounding elements. When $\sqrt{\text{LILA}}$ occurs with the linking morpheme, it is treated as a typical modifier and takes inflection; there is no comparable option for $\sqrt{\text{SEXY}}$.



This derives the NPE ellipsis facts, under the assumption that only maximal phrasal projections can be targets of ellipsis. Adjectival modifiers adjoin to maximal projections that can independently be targeted for ellipsis (thereby stranding the modifier). However, if *a* is adjoined to *n*, then it is contained within its smallest maximal projection, and therefore cannot be stranded.

(107)



The account correctly predicts that, since the structure is distinct from that of inflected adjectives, coordination between the two should be impossible for these speakers; this is indeed borne out (108). (Note that the ungrammaticality of these examples is especially striking given that the EI adjectives appear in a position linearly adjacent to the noun, indicating that, for this speaker, adjacency is not sufficient for inflectionlessness.)

- (108) a. ein [schön-es und lila*(n-es)] Auto
a [beautiful-AGR and purple-AGR] car
'a beautiful and purple car'
- b. ??eine [tief-e und sexy] Stimme
a deep-AGR and sexy voice
'a deep and sexy voice'

For this type of speaker, EI adjectives are not analyzed through the deletion of *aInfl*; but rather, are compounded with the noun, so as not to trigger node-sprouting in the first place. While this analysis works for some speakers, it does not work for all speakers – particularly the speakers who treat EI adjectives as modifiers. The next subsection offers an analysis of the grammar of these speakers in terms of derivational trapping.

The 'Parasitic' Analysis

There are other speakers whose judgments indicate they do not treat exceptionally inflectionless adjectives as compounding elements. For these speakers, I propose a type of 'pseudo-compounding' analysis, whereby inflectionless adjectives establish a relationship with an

adjacent *n* through a postsyntactic process in normal circumstances, but cannot do so when the noun has been elided.

For the speakers in question, it is not necessary for the EI adjective to be adjacent to the noun.

- (109) a. ein Zweig der unbekannt-en lila(-n-en) Blumen
 a branch the.GEN.PL unfamiliar-AGR purple(-LINK-AGR) flowers
 b. ein Zweig der lila(-n-en) unbekannt-en Blumen
 a branch the.GEN.PL purple(-LINK-AGR) unfamiliar-AGR flowers
 ‘a branch of purple, unfamiliar flowers’
- (110) das sexy/lila italiensch-e Auto
 the sexy/purple Italian-AGR car
 ‘the sexy/purple car’

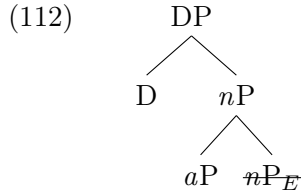
These speakers may also coordinate an inflected adjective with an uninflected adjective, further supporting their shared status.

- (111) a. ein [schön-es und lila] Auto / ein [lila und schön-es] Auto
 a [beautiful-AGR and purple-AGR] car / a purple and beautiful car
 ‘a beautiful and purple car’
 b. eine [tief-e und sexy] Stimme / eine [sexy und tief-e] Stimme
 a deep-AGR and sexy voice / a sexy and deep-AGR voice
 ‘a deep and sexy voice’

The evidence therefore indicates that speakers treat EI adjectives as modifiers that are adjoined to *nP*. The question is then why they are disallowed in NPE.

As discussed above, I assume ellipsis applies to maximal projections and is a property of the head of the elided phrase (see e.g. Landau (to appear)). Under this view, when stranded for NPE, there is no need to move *aP*s out of an ellipsis site; rather, they can be adjoined to a segment of *nP* that is elided.³⁴ This is represented by the tree in (112).

³⁴This is to be contrasted with Saab and Lipták 2016, who move the *aP* to adjoin to a higher position to escape the ellipsis site.



I follow Saab and Lipták (2016) and others in assuming that elided elements are marked for not undergoing Vocabulary Insertion. Further, I follow Saab and Liptak’s claim that elided material cannot be targeted by morphological operations.³⁵

(113) *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.

(Saab and Lipták, 2016, 77)

This does not interrupt node-sprouting, which occurs outside of the domain of ellipsis. Nor does it interrupt the deletion of agreement nodes that occurs for EI elements. I attribute the ungrammaticality to the inability of a subsequent operation to be executed.

I propose that a derivational trapping situation arises when exceptionally inflectionless adjectives cannot establish a ‘parasitic’ relationship with a neighboring element to satisfy a morphological well-formedness requirement (or more appropriately, desideratum) – a proposal that is also explored in parts of Section 2.3 and Section 2.4. The idea is essentially that, in response to an adjectival MWd losing its agreement morphology, another operation is invoked to satisfy a desideratum for adjectives to be inflected. This operation causes the adjective to group itself with a neighboring element, with which it establishes a ‘parasitic’ relation. Because the well-formedness requirement applies to MWds, I propose that these relations (which I represent with the symbol \triangleright) can be established only under strict MWd concatenation. This type of operation can be stated quasi-formally as in (114) (where x stands for any category).³⁶

³⁵I assume the generation of linearization and concatenation statements does not ‘affect’ the domain of X and is therefore uninterrupted by ellipsis.

³⁶Assuming the grammar cannot keep track of whether a deletion operation has applied, I propose that (114) is a sub-rule of the deletion operation, which occurs immediately following the deletion of a Infl.

(114) When $a\text{Infl}$ is deleted, perform R

R : $a \frown x$ becomes $a \triangleright x$, x an inflected category

Because the operation in (114) is in response to deletion of the inflectional node, predicative adjectives will be unaffected, not having combined with an inflectional node at any stage.

In the simplest case, for a prenominal attributive adjective, the head noun will be concatenated with the adjective, and the noun is therefore a valid target (115). This assumes n receives agreement morphology, which is justifiable on the basis of its number and case morphology.³⁷

(115) ein lila Auto ‘a purple car’

$[\sqrt{\text{LILA}} \dots]_a \frown [[\sqrt{\text{AUTO}} n] n\text{Infl}] \rightarrow [\sqrt{\text{LILA}} \dots]_a \triangleright [[\sqrt{\text{AUTO}} n] n\text{Infl}]$

This also applies to the case of prenominal adjective stacking; if *lila* or another EI adjective precedes another adjective, then it will be parasitic on the other adjective.

(116) ein lila italienisch-e Auto ‘a purple Italian-AGR car’

$[\sqrt{\text{LILA}} \dots]_a \frown [[\sqrt{\text{ITALIEN}} a(-\text{isch})] n\text{Infl}(-e)] \rightarrow$

$[\sqrt{\text{LILA}} \dots]_a \triangleright [[\sqrt{\text{ITALIEN}} a(-\text{isch})] n\text{Infl}(-e)]$

In the case of NPE, the rule is triggered – EI adjectives delete $a\text{Infl}$ nodes, thereby satisfying the conditions on triggers in (114) – but the rule cannot be executed, causing a crash. The problem arises because n cannot be targeted by the operation in (114) – according to the Elmo Generalization – but this leaves the NPE derivation without options.

(117) Wenn ich eine Stimme hätte, dann doch eine schön-e/*sexy.

If I a voice have.SBJ, then PTC a beautiful-AGR/sexy

‘If I had a voice, I would rather have a sexy one.’

³⁷For example, *Berg* ‘mountain’ is inflected for number (plural *Berg-e*) but also case, taking *-en* in the dative plural and *-es* in the genitive singular. I therefore assume MWd nouns undergo node-sprouting, though some feature combinations will be realized as $-\emptyset$.

This analysis makes several predictions. First, NPE should be possible if an EI adjective is stacked with another adjective bearing inflection. This is borne out:

- (118) a. Wenn ich eine Stimme hätte, dann doch eine sexy italienisch-e <Stimme>.
 If I a voice had, then PTC a sexy Italian-AGR voice
 ‘If I had a voice, I would rather have a sexy Italian one.’
- b. Wenn ich ein Auto hätte, dann doch ein lila italienisch-es <Auto>.
 If I a car had, then PTC a purple Italian-AGR car
 ‘If I had a car, then I would rather have a purple Italian one.’

A second prediction comes from the reverse order of stacking. Given that the parasitic \triangleright relation is established from left to right, adjectival stacking in which the exceptionally inflectionless adjective is adjacent to the elliptical gap should remain ungrammatical. This is borne out.³⁸

- (119) a. *Wenn ich eine Stimme hätte, dann doch eine groß-e sexy <Stimme>.
 If I a voice had, then PTC a big-AGR sexy voice
 ‘If I had a voice, I would rather have a big, sexy one.’
- b. *Wenn ich ein Auto hätte, dann doch ein groß-es lila <Auto>.
 If I a car had, then PTC a big purple car
 ‘If I had a car, then I would rather have a big purple one.’

A third prediction comes from coordination with NPE. Recall from Section 3.2.3 that two conjuncts ‘come apart’ at the late level of chaining (Kramer, 2010), such that, at the stage of concatenation, both conjuncts are concatenated in parallel with neighboring elements.

³⁸It is also correctly predicted that it is ungrammatical to stack two EI adjectives in NPE environments (i). However, the current account also seems to predict that the comparable unelided expression should also be *ungrammatical* if the first inflectionless adjective cannot be parasitic on the second inflectionless adjective. This is not borne out (ii).

- | | | | |
|-----|---|------|--|
| (i) | *die sexy lila Hose
the sexy purple pants
‘the sexy purple ones’ (referring to pants) | (ii) | die sexy lila Hose
The sexy purple pants
‘the sexy purple pants’ |
|-----|---|------|--|

Assuming the derivation proceeds inside out, we can attribute the grammaticality of (ii) to the ordering of the parasitic operations. If the parasitism between the second EI adjective and the adjacent (inflected) noun is established first, then the preceding adjective may be parasitic on the resultant $a \triangleright n$ complex. Under this approach, (i) is still predicted to be ungrammatical because of the inability of the adjective to be parasitic on the elided noun.

(120) represents the concatenation relations between two conjoined adjectives – one of them inflectionless – and the adjacent noun after deletion of *aInfl* on the EI adjective.

- (120) a. eine [sexy und tief-e] Stimme
 a sexy and deep-AGR voice
 b. eine $\frown \left[\begin{array}{c} sexy \\ tief - e \end{array} \right] \frown$ Stimme

For NPE, we expect that, at the point of deletion of *aInfl*, both coordinated adjectives are concatenated with a head noun. We therefore expect derivational trapping to arise for NPE, for the same reason as the uncoordinated EI adjectives; they are MWd-concatenated with the head noun. We correctly predict that EI adjectives remain ungrammatical in NPE environments even when they are coordinated with an inflected adjective.

(121) (Here are two dresses: the first is black and white and the second is purple and white. Which one do you want?)

- a. ...Ich will das lila*(-n-e) und weiß-e.
 ...I want the purple(-LINK-AGR) and white-AGR
 b. ...Ich will das weiß-e und lila*(-n-e).
 ...I want the white-AGR and purple-LINK-AGR
 'I want the purple and white one.'

(122) (You are a mute that is magically being given a voice. There are two options: i) a deep and sexy voice or ii) a loud and high-pitched voice.)

- a. *Ich will eine sexy und tief-e.
 I want a sexy and deep-AGR
 b. *Ich will eine tief-e und sexy.
 I want a deep-AGR and sexy
 'I want a deep and sexy one.'

One further prediction concerns empty noun constructions, which have been claimed to be derived in a way distinct from typical phrasal ellipsis (see e.g. Saab 2019 and references). German, like English many other languages, allows an adjective to modify an unpronounced noun with no discourse antecedent, and as in other languages, the interpretation is restricted

to generic human interpretations. The modifying adjectives retain adjectival properties, such as adjectival inflection and the ability to be intensified (see Sleeman 2017 on Dutch).

- (123) a. die (sehr) Arm-en
 the (very) poor-AGR
 ‘the very poor (people)’
 b. die (sehr) Lustig-en
 the (very) funny-AGR
 ‘the very funny (people)’

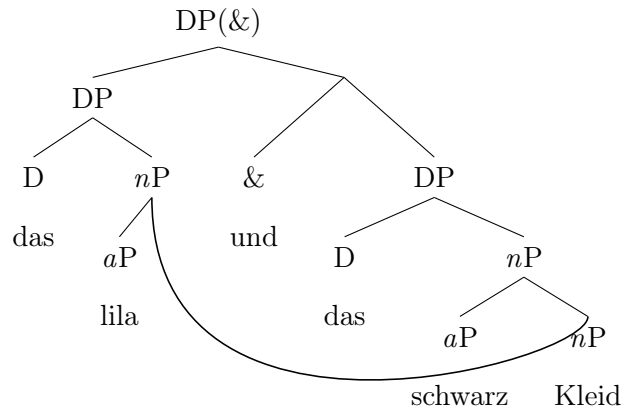
I follow the characterization of empty nouns as having $n[+[HUMAN]]$ (Saab 2019), which I assume are also specified for nonpronunciation. This nonpronunciation gives rise to the same issue as NPE with EI adjectives. Because node-sprouting and other postsyntactic operations are prevented from occurring with empty nouns, they do not serve as viable targets for the parasitic operation. Consequently, EI adjectives are not permitted in empty noun constructions (124).³⁹

- (124) *die (sehr) Sexy
 the (very) sexy
 ‘the very sexy (people)’

One potential wrinkle is that inflection on *lila* is not obligatory with Right Node Raising (RNR), even though such constructions under some accounts involve non-pronunciation of the first noun (125). This is consistent with the analysis if nominal RNR is analyzed as multidominant structure rather than as ellipsis or null anaphora (see Shen 2018 and references therein); a representative tree is given below.

- (125) das lila(-n-e) und das schwarz-e Kleid
 the purple(-LINK-AGR) and the black-AGR dress
 ‘the purple dress and the black dress’

³⁹In full disclosure, this analysis is distinct from the one provided for empty nouns in Section 2.3.3. EI elements show distinct effects in the two languages: in Bulgarian, the definite marker cannot apply to an EI adjective except when the adjective modifies an unpronounced noun, but in German, EI adjectives are grammatical except when the noun is unpronounced. I leave the resolution of this inconsistency to future research.



Computing the concatenation relations for (125) will be much like coordinate structures as described above. Prior to the linearization of the conjuncts with respect to each other, the concatenation relations will be as in (126). Thus inflection will appear for each conjunct, followed by rule will by deletion of *aInfl* on *lila*. The operation that produces \triangleright between the EI adjective and the noun can then apply.

$$(126) \left[\begin{array}{l} \text{das} \frown \text{lila} \frown \\ \text{das} \frown \text{schwarz} \frown \end{array} \right] \text{Kleid}$$

To summarize, the analysis here attributes the ungrammaticality of NPE with exceptionally inflectionless adjectives to a morphological well-formedness requirement (or desideratum) that says that adjectives are inflected. When an inflectional morpheme is deleted, it causes the adjective to establish a parasitic inflectional relation with an adjacent element. NPE is then ungrammatical because no such parasitic relationship can be established with an elided element.

In the next subsection, I contrast the case of German EI elements stranded by NPE with those of Modern Greek, which show no comparable deficiency. I suggest this supports the view that the parasitic operation is superficial.

3.4.3 Acceptable EI elements with Modern Greek Noun Phrase Ellipsis

This subsection explores the inflectionlessness of Modern Greek adjectives, which for many speakers display no defectivity comparable to exceptionally inflectionless adjectives in German. I suggest this indicates that the parasitic operation proposed for German is not operative in Greek, lending support to the view that the parasitic operation is a grammatically ‘superficial’.⁴⁰

Modern Greek adjectives are inflected for gender, number, and case. However, there are a few exceptionally inflectionless adjectives, including *banal* ‘banal’ and *sexy* ‘sexy’. The syntactic distribution of EI adjectives is unremarkable when compared to inflected adjectives.

That these EI elements are ordinary adjectives in other respects is indicated by their distribution: they can take intensifiers (127); they can precede other inflected attributive adjectives (128); they can be coordinated with inflected adjectives (129); and they appear in predicative position (130). This evidence suggests that inflectionlessness is not dependent on the EI element compounding with the noun.

- (127) a. (Akousa) mia poly sexy foni.
 (heard.1.SG) a very sexy voice
 ‘(I heard) a very sexy voice.’
- b. (Eida) mia poly banal tainia.
 (watched.1.SG) a very banal movie
 ‘I watched a very banal movie.’

- (128) a. mia sexy omorfi foni b. mia banal vareti tainia
 a sexy beautiful.AGR voice a banal boring.AGR movie
 ‘a sexy, beautiful voice’ ‘a banal, boring movie’

- (129) a. i vathia kai sexy foni / i sexy kai vathia foni
 the deep.AGR and sexy voice / the sexy and deep.AGR voice

⁴⁰One consultant finds EI adjectives degraded with NPE; whether this is an individual idiosyncrasy, I have not been able to determine.

- b. mia banal kai apogoiteutiki tainia / mia apogoiteutiki kai banal
 a banal and disappointing.AGR movie / a disappointing.AGR and banal
 tainia
 movie
 ‘a banal and disappointing movie’

- (130) a. I foni itan sexy. b. I tainia itan banal.
 the voice was sexy the film was banal
 ‘The voice was sexy.’ ‘The film was banal.’

There is virtually nothing exceptional about their distribution as adjectives; while attributives generally appear prenominal, there is also a marked postnominal option (with a well-known property of Determiner Spreading, on which, see Alexiadou 2014 and references therein). Greek EI adjectives have no difficulty appearing in this position.

- (131) a. (Na ti) i foni i omorfi/sexy.
 (PARTICLE CL) the voice the beautiful.AGR/sexy
 ‘(Here’s) the beautiful/sexy voice.’
 b. (Na ti) i tainia i banal.
 (PARTICLE CL) the movie the banal
 ‘(Here’s) the banal movie.’

Given that EI adjectives exhibit a typical syntactic distribution of an adjective, I propose that they are exceptions to the node-sprouting rule that produces inflection on adjectives. Crucially, however, unlike in German, EI adjectives are able to be stranded in NPE environments just like inflected adjectives, as the following examples illustrate.

- (132) Mou aresoun oi protoporiakes tainies alla den mou aresoun oi
 Me.GEN like the progressive.AGR movies but not me.GEN like the
 kinotipes / banal.
 banal.AGR / banal
 ‘I like the progressive movies but not the banal ones.’

- (133) Mou aresoun oi vathies fones alla den mou aresoun oi traxies/
 Me.GEN like the deep.AGR voices but not me.GEN like the rough.AGR/
 sexy.
 sexy
 ‘I like the deep voices but not the rough/sexy ones.’

- (134) Forao sixna kokina esoruxa alla lefka / bez pote den forao.
 Wear.1.SG often red.AGR underwear but white.AGR / beige never not wear.1.SG
 ‘I often wear red underwear but I never wear white (underwear).’

My suggestion for the contrast between German and Greek EI adjectives is that the parasitic operation is active in the former but not the latter. That there should be variation across languages with respect to this is to be expected, given the superficiality of this postsyntactic operation.

In the next subsection, I contrast the account offered for the German EI adjectives in NPE contexts with previous approaches.

3.4.4 Previous accounts Of inflectionlessness + NPE

The analysis here is inspired by a few previous approaches, but differs from them in some crucial respects. The role of inflection in ellipsis – or nonpronunciation more broadly – was famously observed by Anne Lobeck (e.g. Lobeck 1995). Lobeck’s account can be characterized as one involving *licensing* of unpronounced elements. Under this view, the inability for an EI adjective to appear in NPE could be captured if uninflected adjectives lack the agreement properties needed for licensing ellipsis.

A similar but distinct licensing account is offered by Saab and Lipták (2016) for Spanish. In Spanish, NPE requires that the stranded determiner be able to inflect for number, even though this is not a condition on determiners with pronounced nominals:

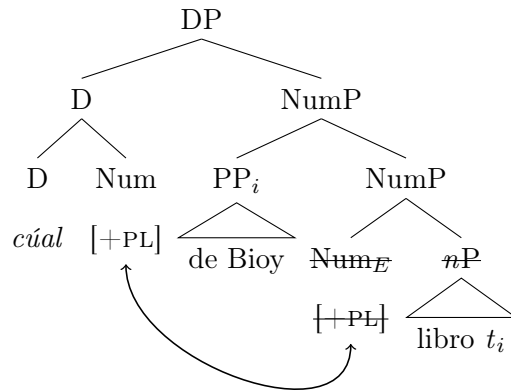
- (135) ¿Qué/cuáles libros de Borges y {*qué/✓cuáles} [] de Bioy te gustan?
 what/which.PL books of Borges and what/which.PL of Bioy you like
 ‘Which books of Borges and which of Bioy do you like?’

Spanish (Saab and Lipták, 2016, 68)

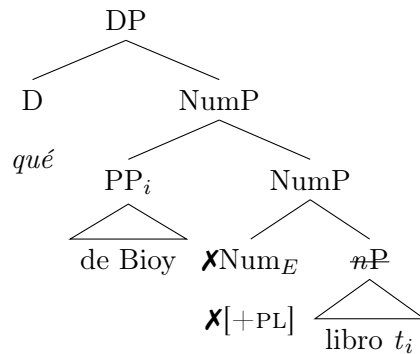
To capture the Spanish facts, Saab and Lipták propose that NPE causes Num to be a stray affix, as NPE prevents the lowering of Num to *n*. The stray affix must be deleted, which is licensed under identity with a concord morpheme on D. Because *qué* has no concord

morpheme,⁴¹ it cannot license deletion of Num; therefore, problems remain for the stray affix. Their analysis of the contrast in (135) is essentially as in (136) (they assume the nominal complement raises out of the ellipsis site):

(136) a.



b.



(adapted from Saab and Lipták 2016, 100-101)

Saab and Lipák claim that deletion of Num in Spanish has the same conditions as Lowering; thus D's concord morpheme can license the deletion of Num. Support for this comes from adjectives, which also receive concord morphology yet fail to license ellipsis (137). Under their account, this is because the adjective is not local to Num.

⁴¹Presumably, the authors assume that concord does not take place at all for *qué*.

- (137) Algunos periodistas están enfadados. Dich-o-s *(periodistas) critican al
 some journalists are angry said-M-PL (journalists) criticize the
 gobierno.
 government
 ‘Some journalists are angry. The above-mentioned journalists criticize the govern-
 ment.’ (Saab and Lipták 2016, 103, citing Eguren 2010, 439)

German, in contrast, does permit NPE with determinerless, stranded adjectives (138). Moreover, the forms of determiners in German do vary by gender, number, and case features, and yet they do not ameliorate NPE with an inflectionless adjective.

- (138) Du magst rot-e Autos. Ich mag gelb-e.
 You like red-AGR cars I like yellow-AGR
 ‘You like red cars. I like yellow cars.’

- (139) (Here are two dresses: the first is black and the second is purple. Which one do
 you want?)
 a. ...Ich will das lila*(-n-e).
 ...I want the purple(-LINK-AGR)
 ‘I want the purple dress.’

Thus Saab and Lipták’s conditions on Spanish NPE do not carry over to the German case.

The current analysis shares with licensing accounts a relation between inflection and ellipsis. In Lobeck’s view, there is a direct licensing relation between the two; in Saab and Lipták’s view, the licensing holds (or can hold) between the inflection and the stranded pieces left by ellipsis. In the current view, exceptionally inflectionless elements essentially are the ones that should be licensed, and ellipsis removes the licensing environment. The analysis offered here is most similar to Saab and Lipták’s, in the sense that problems with ellipsis arise due to postsyntactic derivational issues, though the locus is distinct.

One thing that comes out naturally from the current account but not others is that not all inflectionless elements fail to occur with NPE. For example, numerals above one in

German do not inflect, yet they can be stranded in NPE environments:⁴²

- (140) Er hat zwei Artikel gelesen, und ich habe drei lesen.
He has two articles read, and I have three read
'He read two articles, and I read three articles.' (adapted from Lobeck 1995, 115)

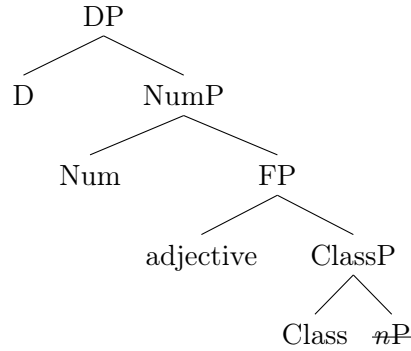
This is expected if uninflected numerals never undergo deletion of inflectional morphology. They lack a well-formedness requirement that would cause them to establish a parasitic relationship with a nearby element; consequently, NPE is grammatical despite the inflectionlessness of numerals.

Previous accounts that specifically refer to exceptionally inflectionless adjectives have framed their defective distribution specifically in terms of forcing the inflected equivalent of an EI adjective. This is because the focus has been on *lila* (e.g. Alexiadou and Gengel 2012; Murphy 2018). However, the other uninflected exceptions discussed above – such as *sexy* 'sexy' and *Schweizer* 'Swiss' – indicate that there is no grammatical outcome when the adjective lacks an inflected counterpart. I have thus based the current analysis on the generalization that indeclinable adjectives are altogether incapable of being stranded in NPE environments. This is a crucial difference from previous approaches, which do not straightforwardly capture why EI adjectives are ungrammatical with NPE.

Alexiadou and Gengel (2012) argue that NPE in Romance and Germanic languages involves a classifier phrase (ClassP) that merges between Num and *n*. ClassP is not elided in NPE, and is instead combined with other nominal material such as determiners. Their account captures the intuition that inflected forms 'license' NPE (Bernstein 1993; Lobeck 1995), with the inflection being the realization of a Class head.

⁴²Lobeck (1995) claims that this is predicted because numerals morphologically realize 'strong agreement' features in her account. But it is not clear why this should be so; numerals are not typically seen as being a form of number agreement or inflection. Moreover, even if they were, they would still lack gender and case features.

(141) a.



- b. Peter hat viele gebrauchte Autos angesehen und schließlich ein neu*(-es)
Peter has many used cars looked.at and finally a new-(AGR)
gekauft
bought
'Peter has looked at many used cars and finally bought a new one.'

Alexiadou and Gengel (2012)

The existence of ClassP remains controversial; see Kramer 2016a for discussion. More problematically, the account makes it coincidental that the morphology of Class looks like inflection. In the case of Italian, Alexiadou and Gengel argue that Class is typically spelled out on nouns as their inflectional 'word markers;' in NPE contexts, however, this morpheme cannot combine with the noun and therefore associates instead with determiners (cf. Bernstein 1993). This account seems reasonable for Italian given the formal identities of the determiner's inflection in NPE and the nominal inflection (142).

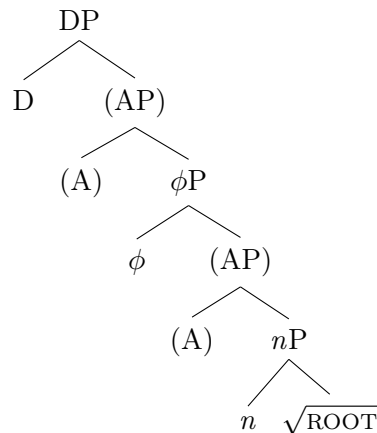
- (142) a. Un(*-o) grande vassoi-o è già in tavola.
a(-AGR) big tray-AGR is already in table
'A big tray is already on the table'
- b. Un*(-o) grande _ è già in tavola.
a(-AGR) big _ is already in table
'A big one is already on the table'

Italian (modified from Alexiadou and Gengel 2012)

However, it remains unclear why Class could not be realized as $-\emptyset$ for EI adjectives such as *sexy*, seeing as it must be realized as \emptyset when i) there is already agreement morphology on another element or ii) the element bears no inflection whatsoever (such as a numeral).

The most articulated analysis of obligatoriness of inflection on *lila* comes from Murphy (2018). While many of the details of his analysis need not concern us, there are three main ingredients for his analysis of *lila*. First, he assumes that there is an independent ϕ head in syntax corresponding to an inflectional affix, which lowers onto an adjective when one is present – when one is not present, it lowers onto the noun (typically to be realized as $-\emptyset$). Second, he claims there are two positions for adjectives to merge in the nominal domain: above and below a ϕ P (143), though merging in a particular position interacts with the constraint in (144), which requires adjectives to be inflected (except for *lila* and others). Third, he claims that ϕ is stranded in elliptical contexts, thereby requiring a last resort strategy whereby the ϕ head undergoes Local Dislocation to its left. This means that, even if *lila* need not bear inflection in the general case, the Local Dislocation operation will place ϕ on it anyway in elliptical environments (145).

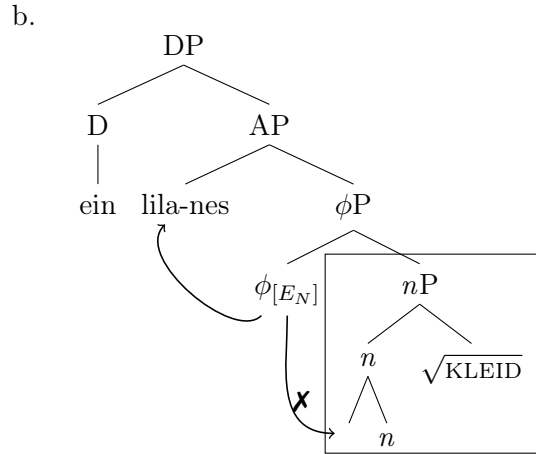
(143) (Murphy, 2018, 343)



(144) *Obligatoriness of adjectival inflection*: An adjective must bear an overt inflectional ending.

(Lexical exceptions: $\{\sqrt{\text{LILA}}, \sqrt{\text{ROSA}}, \sqrt{\text{PRIMA}}, \sqrt{\text{SUPER}}\dots\}$ (Murphy, 2018, 347))

(145) a. ein lila*(-nes) ~~Kleid~~
 a purple-AGR dress



(Murphy, 2018, 361)

Murphy’s account says that *lila* is inflectionless when it appears in a higher adjectival position and is not subject to affixation (through Lowering or Local Dislocation). Murphy’s account is elegant in relating a number of inflectional patterns in elliptical contexts, though it does so by putting the equivalent of an AGR node in the syntax.

One issue is the case of *sexy*, which cannot inflect and cannot appear in NPE environments. We might expect the ϕ head to ‘pop out’ in the context of *sexy* (producing *sexy-es*), because it is the only place where the head can go – or even just remain *sexy* if the morpheme can be deleted subsequently to satisfy morphotactic requirements for *sexy*. What is more problematic, however, is that the account of *lila* makes incorrect predictions for coordinated adjectives, which I now turn to.

First note that *lila* can be part of a coordinated *aP* occurring with an elided noun (146); this environment requires inflection on *lila*, as well. This much is consistent with Murphy’s account if morphological operations distribute across conjuncts like ATB effects (Embick 2007b; Kramer 2010; Hanink 2018a, among others): the stranded ϕ affix would be applied to both adjectives of the coordinated phrase. In the case where an uninflected adjective has no inflected counterpart (**sexy-e/en*), the result is ungrammatical (147). In (146) and (147), the conjunct orders are both ungrammatical, though one of my consultants notes that the order in which the uninflected adjective occurs last is worse.

- (146) (Here are two dresses: the first is black and white and the second is purple and white. Which one do you want?)
- a. ...Ich will das lila*(-n-e) und weiß-e.
 ...I want the purple(-LINK-AGR) and white-AGR
- b. ...Ich will das weiß-e und lila*(-n-e).
 ...I want the white-AGR and purple-LINK-AGR
 ‘I want the purple and white one.’
- (147) (You are a mute that is magically being given a voice. There are two options: i) a deep and sexy voice or ii) a loud and high-pitched voice.)
- a. *Ich will eine sexy und tief-e.
 I want a sexy and deep-AGR
- b. *Ich will eine tief-e und sexy.
 I want a deep-AGR and sexy
 ‘I want a deep and sexy one.’

Consider now the prediction in non-elliptical environments. Coordinated adjectives would necessarily share the same position within the nominal domain: either lower or higher than ϕ . The ATB-like condition on conjuncts should hold here as well: if ϕ lowers onto one adjective, it should lower onto both. Murphy’s analysis thus predicts that it should not be possible to coordinate an uninflected *lila* with an inflected adjective. This prediction is not borne out; the coordination data are repeated here.

- (148) a. ein lila(-n-es) und weiß-es Tier
 a purple(-LINK-AGR) and white-AGR animal
 ‘a purple and white animal’
- b. eine [sexy und tief-e] Stimme
 a deep-AGR and sexy voice
 ‘a deep and sexy voice’

The account offered here does not suffer from these issues; see above for discussion on how ATB effects are handled with coordination. Prior to the linearization of the conjuncts with each other, both adjectives in (148) will be concatenated with *n*, thereby triggering node-sprouting on each conjunct. Following this operation, the conditions will be met for deletion

to apply to the inflectional node with *lila*, while the other adjective will retain its inflection.

To summarize this section, exceptionally inflectionless adjectives are prohibited in NPE environments. For some speakers, this is best analyzed with a compounding analysis, but for other speakers, I proposed that inflectionless adjectives attempt to form a parasitic relation with a neighboring element, but fail to do so when the noun is elided, causing a crash (see also Sections 2.3 and 2.4 for other applications of a related analysis for phenomena in BCS.). The current account fares better than previous approaches in various respects.

In the next section, I highlight general differences between the type of derivational trapping approach advanced here and the broader set of alternatives.

3.5 Against Other Alternatives to Derivational Trapping

In this section, I compare the current derivational trapping approach with some other theoretical alternatives. While the discussion references the German case of exceptionally inflectionless elements specifically, the contrast highlights key differences between approaches at a more abstract level, demonstrating the superiority of the derivational trapping approach.

3.5.1 Optimality Theory and the null parse

In Optimality Theory approaches, exceptionality has often been captured with lexically specific constraints; see Pater and Coetzee 2005 and references therein. As a simple illustration, Pater and Coetzee (2005) distinguish the stress of *Cánada*, which conforms to the general English stress pattern, and *banána*, which is exceptional. They discuss the difference using a constraint NONFINALITY, a markedness constraint that is violated when the rightmost material in a word is footed, and a conflicting constraint ALIGN-R, which says that a foot should be in final position. A lexically specific clone of ALIGN-R is applicable for *banana* (and any other exceptions), and its hierarchical placement with the constraint set leads to different outcomes in stress assignment for *Cánada* and *banána*, as represented in (149) (with the subscript L reflecting lexical exceptionality).

(149) Modified from Pater and Coetzee (2005, 87)⁴³

banana _L	ALIGN-RIGHT _L	NONFINALITY	ALIGN-RIGHT
☞ a. ba(nána)		*	
b. (bána)na	*!		*

Canada	ALIGN-RIGHT _L	NONFINALITY	ALIGN-RIGHT
a. ca(náda)		*!	
☞ b. (cána)da			*

In analogy to this set up, we could imagine that a constraint INFL can be operative, which states that an element of some category must be inflected. The conflicting constraint would be some type of DEP constraint that prohibits the addition of inflectional affixes; call it DON'T INFL. A lexically specific clone for DON'T INFL then applies to EI elements. This is demonstrated for the contrast between German *schön* 'beautiful', which, like most adjectives in the language, inflects in prenominal position, and *sexy* 'sexy', which exceptionally does not. (See Section 3.3 for discussion of the German pattern of exceptionality and noun phrase ellipsis.)

(150) Encoding exceptional inflectionlessness

schön	DON'T INFL _L	INFL	DON'T INFL
a. schön		*!	
☞ b. schön-es			*

sexy _L	DON'T INFL _L	INFL	DON'T INFL
☞ a. sexy		*	
b. sexy-es	*!		*

Setting aside the important issues of locality and what the postsyntactic input actually looks

⁴³The candidates for Canada are erroneously reversed in the original paper.


like, this will work mechanically in the basic case. The question that then arises is how the system handles the types of disruptions explored in this dissertation. As discussed in Section 3.4.1, for example, German EI adjectives cannot appear in noun phrase ellipsis (NPE). As discussed above, despite the appearances from $\sqrt{\text{LILA}}$, there is no alternative derivation in competition, as evident from $\sqrt{\text{SEXY}}$, which has no corresponding inflected form.

- (151) Wenn ich eine Stimme hätte, dann doch eine schön-e/*sexy.
 If I a voice have.SBJ, then PTC a beautiful-AGR/sexy
 ‘If I had a voice, I would rather have a sexy one.’ (written by a mute)

Because there is no grammatical output, the most straightforward way of capturing this type of phenomenon in OT is by appealing to the null parse \emptyset , which is a candidate that corresponds to a lexical gap (see Wolf and McCarthy 2010 and references therein). According to Wolf and McCarthy, the null parse only violates the constraint MPARSE; see their work for a possible (but objectionable) explanation as to why all other constraints, including faithfulness constraints, are satisfied by \emptyset . The position of MPARSE in the constraint hierarchy then defines when gaps appear.

For the German case, another constraint would have to be added specifying that inflection is (inviolably) obligatory in the context of ellipsis; call this ELIDE+INFL, which would have to outrank the other constraints discussed so far. In order for the null parse to win in the case of EI adjectives in elliptical environments, it must be ranked below ELIDE+INFL and DON’T INFL_L; otherwise, the inflectionless candidate would win instead.

- (152) EI and non-EI adjective in elliptical contexts

sexy _L	ELIDE+INFL	DON’T INFL _L	MPARSE	INFL	DON’T INFL
a. sexy	*!			*	
b. sexy-es		*			*
 c. \emptyset			*		

schön	ELIDE+INFL	DON'T INFL _L	MPARSE	INFL	DON'T INFL
a. schön	*!			*	
☞ b. schön-es					*
c. Ø			*		

While this set of constraints seems to reflect all of the relevant generalizations, it does so essentially by restating the empirical generalizations in a way that is not particularly enlightening. Especially troubling in this framework is the use of the null parse and its corresponding constraint MPARSE, which is a solution to the problem that arises in OT that the least bad candidate is sometimes not good enough.⁴⁴

In contrast, gaps arise naturally in the derivational framework presented here: they are characterized as errors arising from disruptions to processes: when rules that are triggered cannot be executed. It is moreover more natural in the derivational account because the gaps arise from the ways in which the general mechanisms of the grammar operate, and how these mechanisms fail for exceptional inputs. This is unlike the null parse analysis, whose placement in the constraint hierarchy seem to have to be determined by the learner based on the distribution of gaps. These cases would then be learned explicitly by what is avoided – in other words, by negative evidence. An OT account thus does not fare much better than the account of gaps from Halle (1973), who assigns the feature [-LEXICAL INSERTION] to derived forms that correspond to gaps, to reflect that these forms are not possible words.⁴⁵

The existence of defective patterns are thus more consistent with the type of serial approach advanced here, and are, at best, unnatural in parallelist approaches like OT.

⁴⁴See also the discussion in Embick and Marantz 2008, 34-36 for predictive differences between a global OT framework and a local rule-based framework.

⁴⁵Halle (1973) is concerned with issues having to do with both agreement morphemes and with e.g. category-changing morphemes. The latter type of ‘gap’ is explored in greater detail by Embick (2018), who proposes that forms such as *confus-al* that seem like gaps are in fact generated and encounter no PF issues, but have no corresponding semantic space associated with them. If we accept this, the locus of disruption is distinct for the *confusal* cases compared with the morphophonological gaps described here; the latter are the result of derivational failures along the PF branch.

3.5.2 Generate and filter

Another possibility for deriving the defectivity of some inflectionless forms in certain syntactic contexts would be a generate-and-filter analysis. In this type of analysis, the grammar could be capable of manipulating exceptionally inflectionless forms without issue, yielding grammatically well-formed, licit outputs, but the generated expressions would then be subject to linguistic-external factors – such as processing factors – that would disfavor the use of these expressions.

One of the most intuitive alternatives to pursue along these lines takes EI-related defectivity to be a matter of *recoverability*. For the German NPE cases, the issue would be that adjectives typically (partially) indicate information about gender, number, and case of an elided noun, which facilitates the identification of which noun is under the ellipsis site. Because EI adjectives lack this information, processing would be disrupted or delayed, and the speaker would therefore object to the grammatically well-formed expression.

The problem with this view for German is manifold. First, there can be other elements such the article – but also another adjective coordinated with the EI adjective – that should ameliorate the acceptability judgment, but they in fact do not (153). Second, it is typical and acceptable to have NPE without any adjective, where the remaining overt nominal material is never inflected, such as numerals higher than one (154), though under the processing view, we might expect that these should be similarly disruptive. Third, if recoverability is merely a processing issue, it is not clear why expressions should remain ill-formed after a speaker has introspected. After all, a garden-path sentence is not actually ungrammatical.

(153) (You are a mute that is magically being given a voice. There are two options: i) a deep and sexy voice or ii) a loud and high-pitched voice.)

- a. *Ich will eine sexy und tief-e.
I want a sexy and deep-AGR
- b. *Ich will eine tief-e und sexy.
I want a deep-AGR and sexy
'I want a deep and sexy one.'

- c. Ich will eine tief-e.
 I want a deep-AGR
 ‘I want a deep one.’

- (154) Er hat zwei Artikel gelesen, und ich habe drei lesen
 He has two articles read, and I have three read
 ‘He read two articles, and I read three.’ (adapted from Lobeck 1995, 115)

Another generate and filter model could try to explain these patterns of ungrammaticality by appealing to extragrammatical competition with other expressions (see e.g. Embick and Marantz 2008; Embick 2008 on *competition for use*). For example, it could be decided by extragrammatical competition that repeating the noun rather than eliding it with exceptionally inflectionless elements such as *sexy* is preferable (for whatever reason). While this seems plausible, it does not actually explain anything; why would this preference arise for inflectionless elements even in coordination with an inflected element? I maintain that a grammatical explanation is called for, along the lines of the account presented here.

In this section, I compared two alternative approaches to the current one, arguing that they are insufficient, and that the derivational trapping analyses offered here are superior.

3.6 Conclusion

This chapter provided evidence from German adjectival inflection for several proposals presented in or related to the content of Chapters 1 and 2, namely i) node-sprouting occurs in the postsyntax and can be linearly conditioned; ii) node-sprouting can occur at the phrasal level; iii) inflectionlessness is (or can be) due to postsyntactic processes; and iv) that derivational trapping accounts for some patterns of ungrammaticality – in this case, the inability for inflectionless adjectives to be stranded by noun phrase ellipsis.

In the next chapter, I focus on a variety of phenomena beyond inflectionlessness that also give rise to derivational trapping situations.

Chapter 4

More on Derivational Trapping: Gaps, Coordination, and Possessives

The idea explored in previous chapters is that ungrammaticality can arise from crashes due to *Derivational Trapping*, when a rule is triggered but cannot be executed (see Section 1.2). The relevant definition is repeated below; recall that *conditions on triggers* are the conditions that, when met, will trigger the application of the rule, while *conditions on operands* are the elements that are referred to in the change specified by the rule.

- (1) **Derivational Trapping:** When the conditions on triggers for a rule are met, but the conditions on operands are not, the system cannot ‘escape’ the rule and proceed with the derivation. The result is a crash.

While previous chapters identified grammatical issues that arise from exceptional circumstances (i.e. exceptionally inflectionless elements), in this chapter, I discuss a mélange of seemingly unrelated phenomena that I propose can give rise to derivational trapping: i) morphophonological rules – which can cause lexical or paradigmatic gaps, ii) postsyntactic movement with coordinate structures – which can cause across-the-board violations – and iii) postsyntactic operations that refer to the same element in two different ways (i.e. as a phrase and as a head). These seemingly disparate phenomena have in common that they can involve i) triggering of a rule followed by ii) the inability to execute the rule. This is a natural consequence of the formulation of rules advanced in the dissertation.

I go through each of these phenomena in turn in this chapter. Section 4.1 analyzes a

specific gap in English – the *stride* gap – and shows how a derivational trapping analysis fits the pattern, given certain assumptions about morphophonology and featural representations of English past participles. In Section 4.2, I show how preposition-determiner contractions interact with coordination in several Romance languages (French, Italian, Brazilian Portuguese, and Spanish), and offer a refinement of ATB violations in derivational trapping terms, which correctly captures apparent violations in cases of optionality. In Section 4.3, I show how the formation of pronominal possessives in English is formulated in a way that mixes headedness and phrasality, with certain outputs being ungrammatical (e.g. **one of them’s books*); I attribute this to derivational trapping. Section 4.4 concludes.

4.1 Lexical Gaps, With Special Attention Paid to *stride*

In this section, I examine the lexical gap identified with the English verb *stride*, and offer a proposal that ties the gap to underivability due to derivational trapping. In brief, a morphophonological rule is triggered but cannot be executed, causing a crash. I offer a concrete proposal that details the representation of participles, preterites, and the morphophonological rules, from which certain predictions about the distribution of gaps follow.

There exist in natural language ‘lexical’ or ‘paradigmatic’ gaps (see Halle 1973; Baerman et al. 2010; Arregi and Nevins 2014; Yang 2016), which are conceivable, expected (sets of) forms that, while analogous to other existing forms in the language, are judged as ungrammatical. For example, consider the English case of *stride*. For many English speakers who use the preterite *strode*, the past participle of the verb has no well-formed incarnation, as speakers with the preterite *strode* reject *stridden*, *strode*, and *strided* as participial forms (see e.g. Yang 2016). This gap, which I will refer to as the *stride* gap, is in some sense unexpected, given that English has the grammatical resources to build the syntactic object(s) that would correspond to the participial form of *stride*, as well as formal realizations for $\sqrt{\text{STRIDE}}$ and the participial morpheme.

These forms are ungrammatical because of PF-related problems and not because their syntax is ill-formed. Evidence in support of this comes from, among other phenomena,

ellipsis (see Section 2.1 for more evidence). Assuming ellipsis applies to complex structure, the contrast in (2) suggests that the ungrammaticality in the (b) example stems specifically from issues having to do with realization, which in the case of the ellipsis in (a), do not arise because the participial form is not realized when its syntactic structure is part of the ellipsis site.

- (2) a. Jane walked/strode into the room even though she shouldn't have.
 b. Jane shouldn't have walked/{*strided/*strode/*stridden} into the room.

Lexical gaps are a striking phenomenon because we might expect that, in the absence of more specific forms, that default realization should be available (e.g. *stride-d*). I propose that gaps arise from a failure to satisfy conditions on operands, even when each morpheme in question has a default realization. In particular, I will argue that gaps can arise from derivational trapping in the domain of morphophonological rules.

In the DM literature on defectivity, a different type of approach has been adopted. A number of researchers have suggested instead that defective distributions arise from the absence of elsewhere Vocabulary Items. Arregi and Nevins (2014), for example, suggest that Spanish verbs like *abolir* 'abolish', which exhibit defects, have roots whose Vocabulary Items are like that in (3). Crucially, the only Vocabulary Item that realizes the root does not have a full distribution; it is only licensed in one environment.¹

- (3) *Vocabulary entry for* $\sqrt{\text{ABL385}}$
 /abol/ \leftrightarrow $\sqrt{\text{ABL385}}$ / _____[-consonantal, +high, +back]
 (Arregi and Nevins, 2014, 325)

The entry in (3) accounts for many speakers' inability to produce various forms such as the first-singular indicative (**abol-o*, **abuel-o*), despite being able to produce other forms such

¹Note that this analysis involves phonologically conditioned allomorphy that is outward-sensitive, which has been argued to be impossible (Bobaljik 2000); though see Arregi and Nevins's (2014, 325-327) more nuanced discussion on this point.

as the first-plural indicative (*abol-imos*).²

If we took this position to its extreme, and assumed that it was the *only* way to account for gaps, the prediction appears to be that gaps should not occur when the relevant morphemes all have default realizations. An incarnation of this idea is stated forcefully by Harley:

- (4) “Nodes with an elsewhere realization will never suffer from a paradigm gap; there will always be a form which can be inserted to represent that node’s content.”

(Harley, 2014, 246)

While the absence of default Vocabulary Items could be one potential source of gaps, in the current theory, gaps can arise from other types of postsyntactic disruptions, even when Vocabulary Items with elsewhere distributions exist for all of the relevant morphemes. I argue that this is exactly the case for *stride*, meaning the statement in (4) is technically false. I propose more specifically that the *stride* gap arises from i) a diacritic feature that specifies a morphophonological change, in conjunction with ii) a derivational trap that arises when no specific morphophonological change can be executed.

4.1.1 Analyzing the *stride* gap

Recall that many speakers find any potential version of the past participle of *stride* ill-formed, including **stridden*, **strode*, and **strided*. I propose to model this through derivational trapping in morphophonological rules. I offer an explicit account of how participles are

²The Spanish verb *abolir* ‘abolish’ is one of several verbs rejected by many speakers in various conjugated forms (Arregi and Nevins 2014, 324-327, Yang 2016, 147-152, a.o.). Note, however, that like the English case of *stride*, *abolir* is grammatical under ellipsis even when its comparable overt realization is rejected. This is shown below for TP-ellipsis (e.g. Saab 2010) with $\sqrt{\text{ABOL}}$.

- (i) Nosotros abolimos las leyes injustas, y ellos también.
we abolish.PRS.1.PL the laws unjust, and they also
‘We abolish unjust laws, and they abolish unjust laws, too.’
- (ii) [Ellos ?/?/*abuelen] / [Ellos ?/?/*abolen] las leyes injustas.
they abolish.PRS.3.PL / they abolish.PRS.3.PL the laws unjust
‘They abolish unjust laws.’

representationally related to past tense forms, and in so doing, capture the asymmetry of participles and preterites with respect to when gaps occur.

Let us assume that English ‘past participles’ (which are used in both perfects and passives) correspond to two realized morphemes: a $\sqrt{\text{ROOT}}$ and whatever the participial head is (e.g. Asp or Voice).³ Despite the existence of the gap, I demonstrate that both the root and the participial head have default realizations.

The root $\sqrt{\text{STRIDE}}$ is compatible with a heterogenous collection of environments, which we expect if its realization has an elsewhere distribution. Apart from the participle, it appears in typical verbal environments (built off of $[\sqrt{\text{ROOT}} v]_v$ structures), including the past tense (*strode*) and the present participle (*striding*). More interestingly, it can occur as an underived noun ($[\sqrt{\text{STRIDE}} n]_n$), as in *a quicker stride* and for some speakers as an *a*-prefixed preposition (*astride one’s horse*). It is even conceivable that the adjective *strident* is built off of $\sqrt{\text{STRIDE}}$. The root is therefore not licensed only in particular environments; rather, it has a wide, heterogenous distribution. This suggests it is unrestricted; that is, there are no contextual conditions on its realization.

The participial head also has a default realization: the well-known *-ed* suffix. The defaultness of *-ed* is more famous from discussions of the past tense, but see Adamson 2019 for discussion of the relationship between participles and past tense forms, which in this work are assumed to implicate the same competing Vocabulary Items (see also Halle and Marantz 1993; Bobaljik 2012). The defaultness of *-ed* for participles is perhaps most evident from its application to novel verbs in both perfect and passive environments (e.g. *She has blorg-ed the sponge; the sponge was blorg-ed by her*); the *-ed* realization of the participle is also overregularized in children’s speech in participial contexts (Redmond, 2003). We thus have elsewhere distributions for two morphemes – $\sqrt{\text{STRIDE}}$ and the participial head – that, when combined, produce an illicit form. Thus (4) cannot be correct; a lexical gap arises despite the default realization available to all of its morphemes.

Crucially, speakers who have a gap are those who form the past tense with the irregular

³For concreteness, let us assume that *v* is pruned away, in the sense of Embick (2010).

strode (Yang 2016); speakers with the regular *strided* for the past tense also allow *strided* for the participle. There is thus an implicational relation between the participial and the preterite forms. There is in fact a more general connection between the forms of the participles and the preterites. One intuition in the literature is that there is some type of implicational relation between preterites and participles; in particular, if one form is irregular, then the other is, as well. Yang (2016, 147) states, for example, that “...once learners recognize a verb is irregular – for example, on hearing *strode*, which does not bear the regular *-ed* suffix – they will need positive evidence to complete the inflectional paradigm”.

A more specific implicational relation has been proposed by Bobaljik 2012 and Adamson 2019, who argue that English participles and preterites are related to each other via featural containment, accounting for certain patterns of syncretisms.⁴ Their theory of containment aims to capture the virtual absence of a so-called ABA pattern among base forms for the order bare-participle-preterite.⁵

(5)

BARE	PARTICIPLE	PRETERITE	Pattern
put	put	put	AAA
teach	taugh-t	taugh-t	ABB
run	run	ran	AAB
swim	swum	swam	ABC
			*ABA

(modified from Adamson 2019, 2)

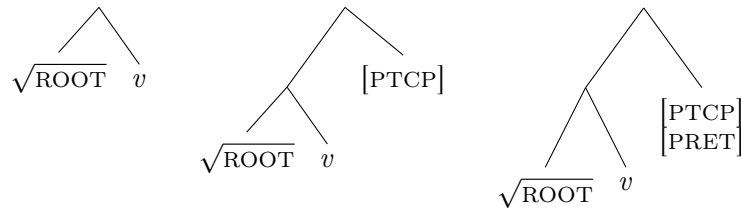
I adopt my containment analysis from Adamson 2019, in which participles bear the feature [PTCP] while the preterites additionally have [PRET].⁶

⁴See Andersson 2018 for an alternative view.

⁵There have been two exceptions noted by Bobaljik 2012; Andersson 2018: *shear*~*shor-n*~*shear-ed* and *swell*~*swoll-en*~*swell-ed*. See Adamson 2019 for an impoverishment analysis that captures these exceptions, and see below for more discussion.

⁶The relation between the participial feature and its status as passive or perfect is left open; it may be that the syntacticosemantic contribution of the participial feature is contextually modulated via contextual allophony, on which, see e.g. Marantz 2013; Anagnostopoulou and Samioti 2014; Wood and Marantz 2017.

- (6) 'Bare' verb Past participle Preterite



It is important to note that irregularity in this system should have a *one-way* implicational relation: if the participle has an irregular base, then so too should the preterite, but not vice versa. This accounts for the virtual absence of the ABA pattern of vowel changes to the base.

In terms of irregular allomorphy of participle and preterite suffixes, there is rampant syncretism. For example, verbs that end with irregular *-t* do so in both participle and preterite forms (*leave~lef-t~lef-t*; *bend~ben-t~ben-t*; etc.), and the verbs that take regular *-ed* in the participle also do so in the preterite. This can be captured through underspecification (cf. Halle and Marantz 1993); the feature shared by both the participle and the preterite is referred to in Vocabulary Items that are applicable for both.

- (7) [PTCP] ↔ -t / {√LEAVE, √BEND, √BUY...}
 [PTCP] ↔ -∅ / {√HIT, √SING, √SIT...}
 [PTCP] ↔ -ed (produces e.g. participle *ben-t* and preterite *ben-t*)

A further systematic pattern comes from verbs that take the participial suffix *-en* (e.g. *give-n*, *broke-n*, etc.), of which there are around 60 members. In general, verbs that take the suffix *-en* in the participle take *-∅* in the preterite. This cross-cuts four patterns of vowel changes in the base: AAA (*beat ~ beat-en ~ beat-∅*); AAB (*grow ~ grow-n ~ grew*); ABB (*hide ~ hidd-en ~ hid-∅*); and ABC (*ride ~ ridd-en ~ rode-∅*). I propose to capture this with a diacritic feature [α] on all roots that take *-en* in the participle.⁷ Relevant Vocabulary

⁷Some authors have objected to the use of diacritic features on roots because they conflict with the status of roots as category neutral (e.g. Acquaviva 2008). However, if diacritic features are introduced along the PF branch (according to the Feature Disjointedness view discussed at the beginning of Chapter 2), then the categorial neutrality of roots is preserved in the syntax; it is only in the postsyntactic component when

Items are given below.

(8) Some Vocabulary Items for Participial and Past Tense forms

[PRET][PTCP] ↔ ∅ / $\sqrt{\text{ROOT}}^{[\alpha]}$

[PTCP] ↔ -en / $\sqrt{\text{ROOT}}^{[\alpha]}$

[PTCP] ↔ -ed

Halle and Marantz (1993, 125) report that 48 of 58 *-en* verbs take \emptyset in the preterite. The following is a near-exhaustive list of exceptions, which take default *-ed* in the past tense: *mow, prove, saw, shave, shear, show, strew, and swell*.⁸

As discussed by Adamson (2019), defining the class of *-en* verbs by the alternation between *-en* and \emptyset is not unreasonable; this correlation could in principle be treated as productive in Yang's (2016) sense, as the maximum number of exceptions to a productive generalization with 58 members according to the Tolerance Principle is 14, which is above the value of 10 *-en* verbs that take something other than \emptyset . For the handful of cases in which verbs that take *-en* for the participle take *-ed* for the preterite, I follow Adamson 2019 by deriving this through the impoverishment of $[\alpha]$ in the marked context of [PRET]. (See Noyer 2005; Calabrese 2015 for analogous impoverishment of diacritic features.)

(9) **Diacritic Feature Impoverishment Rule**

For $\sqrt{\text{ROOT}}^{[\alpha]}$, delete $[\alpha]$ / [PRET] for $\sqrt{\text{ROOT}} = \{\sqrt{\text{PROVE}}, \sqrt{\text{SHOW}}, \sqrt{\text{STREW}} \dots\}$

diacritic features would be assigned to roots when they combine with specific categorial heads.

⁸Some speakers report that – with the exception of *shown* – many of the participial forms of this class (*mown, proven, shaven, etc.*) – are more likely usable only as adjectival passives, with some *-en* forms being degraded when used as perfect or verbal passive participles (see Embick 2004 on stative passives). In these cases, the preferred forms of eventive participles are derived through the default *-ed*.

- (i) their (clean-)shaven faces
- (ii) They have shaved/(?/?/*shaven) their faces.
- (iii) ?/?/*Their faces were shaved/(?/?/*shaven) yesterday by the local barber.

I assume the implicational relations between participles and preterites holds only for verbal eventive participles. This means that the number of exceptions to the generalization that *-en* participles correspond to \emptyset preterites is even smaller. For work on stative passives, see Kratzer 2000; Embick 2004; Gehrke 2015; McIntyre 2015, among others.

The $[\alpha]$ feature is not only relevant for suffix allomorphy; it is also relevant to the morphophonological rules that alter the vowel of the base. With the exception of the verb *beat*, all verbs that take participial *-en* change the vowel in either one or both of the derived forms. However, the vowel changes themselves are heterogeneous in their distribution; see Halle and Mohanan 1985 for some of the complications (and Yang 2016, Chapter 5 for some discussion).

I propose that the unity of effect among *-en* verbs – a vowel change (broadly construed) – is represented by *always* triggering a morphophonological rule R at the point of Vocabulary Insertion when both $[\alpha]$ and $[\text{PTCP}]$ are present. The exact vowel changes, however, are dictated by which list a verb is on as well as the combination of features.⁹

Because these changes are idiosyncratic and specific, I propose that any actual change specified in the rules can only come about if it is attested in the input. This includes the option of ‘no change’.

A quasi-formal version of this is in (10), with different patterns of changes in the base represented by different rule templates. I abstract over the phonological details of the vowel changes, notating the vowels just with v .¹⁰

(10) If $[\alpha]$ / $[\text{PTCP}]$, perform R .

R : If $\sqrt{\text{ROOT1}}, \sqrt{\text{ROOT2}}$, etc. perform R_1 . For $\sqrt{\text{ROOT3}}$, perform R_2 , etc.

R_1 : $v_1 \rightarrow v_2$. If $[\text{PRET}]$, perform R_a

R_a : $v_2 \rightarrow v_3$

R_2 : $v_1 \rightarrow v_2$

R_3 : No change. If $[\text{PRET}]$, perform R_b

R_b : $v_1 \rightarrow v_2$

R_4 : No change.

⁹The status of morphophonological alternations is still a contentious topic; see Haugen and Siddiqi 2013; Harley and Blanco 2013; Embick and Shwayder 2018; Petrosino 2018 for discussion. With respect to the connection between containment and morphophonology, see discussion in Adamson 2019.

¹⁰A rule could be specified, for example, to change ai to i (eg. *bite* \sim *bitt-en* \sim *bit*). See Halle and Mohanan 1985 for one proposal of the phonological changes (though note that their assumptions about derivation are not compatible with the current ones).

R_5 : If [PRET], perform R_c

R_c : $v_1 \rightarrow v_2$

Any vowel changes to the participle are specified prior to changes to the preterite: this captures the absence of ABA. In (10), R_1 represents an ABC pattern in which the vowels are all different from each other (as in *ride* ~ *ridden* ~ *rode*); notice that the preterite rule operates on the output of the participial rule. R_2 represents an ABB pattern (*freeze* ~ *froze-n* ~ *froze*); the participial change is maintained and not further specified for the preterite. R_3 represents an AAB pattern (as in *give* ~ *give-n* ~ *gave*); here, it is specified that there is no change for the participle (see also Section 2.2 for discussion of specified null changes), while the preterite undergoes a vowel change. R_4 represents an AAA pattern (*beat* ~ *beaten* ~ *beat*), in which there is no change for either the participle or the preterite; note that it is specified in a way similar to R_2 (ABB).

For the *stride* gap, the crucial rule is R_5 . This rule produces the preterite *strode*, but there is no operation that produces a change specified simply for the feature [PTCP]. This causes a crash when the participle of *stride* tries to be formally realized. This is thus an instance of derivational trapping.

Why could *stride* not just be specified for ‘no change’ as in R_3 ? As mentioned above, ‘no change’ also counts as a type of change that must be attested in a child’s input in order for the grammar to specify it. Thus a child would have to hear *stridden* in order to list the changes in that type of rule. Similarly, R_2 would not be acceptable for *stride* solely on the basis of knowing that *strode* is the past tense, because this is not an attestation of the change just for participles.

This theory makes a prediction. Specifically, this theory predicts an asymmetry in terms of possible gaps for participles and preterites. Because i) the representation of preterites is a proper superset of the representation of participles and ii) only specified changes must be attested, we expect an attested vowel change for an *-en* participle to always carry over to a preterite (in the absence of a more specific vowel change for the preterite). This would be an R_2 rule.

This is consistent with the data; the gaps in English are participles whose corresponding preterites have irregular vowel changes, and not the other way around (e.g. *dive*, *stride*, *strive*, etc.).¹¹ What is perhaps more telling, however, is the marginal acceptability or existence of irregular preterites for *swell* and *shear*. As mentioned in Footnote 5, these verbs have ABA patterns (*shear* ~ *shorn* ~ *sheared*; *swell* ~ *swollen* ~ *swelled*). Adamson (2019) analyzes these cases with impoverishment of $[\alpha]$ in the context of [PRET], which connects the loss of the vowel change with the default exponence of *-ed* in the preterite. These preterite forms are not gapped (they are, respectively, *swelled* and *sheared*) – but moreover, their conceivable irregular forms *swole* and *shore* are in some varieties the correct form of the preterite (according to the Oxford English Dictionary). And indeed, these would be the expected forms in the absence of the impoverishment rule given i) the allomorph for the preterite ($-\emptyset$) conditioned by $[\alpha]$ and ii) the pattern of vowel change induced by R_2 .

Further confirmation for this approach comes from German, which has also been argued by Bobaljik (2012) to relate participles to preterites via containment (working from observations made by Wiese 2008). Given the widespread use of participles and the comparatively less frequent use of simple past tense forms in the language, we might expect from a theoretically naïve point of view that certain unattested preterites would be gapped if they have irregular participles. However, this is not the case; instead, there is variation or indeterminacy regarding whether the form remains irregular or the regular is used instead. For example, the verb *melken* ‘to milk’ undergoes an irregular vowel change for the past participle *ge-molk-en*, but there is variation regarding whether the correct form of the simple past is based on *molk* (with an irregular \emptyset in the realization of tense) or *melk-t-e* (with the default *-t*). If the change to the participle is maintained in the preterite, it is due to the underspecification of the morphophonological rule, while the use of the default would involve the same type of impoverishment as *shear*.¹²

¹¹Embick and Marantz (2008) and Yang (2016) report that the preterite form of *forgo* is a gap (**forwent*, **forgoed*). This persists as a problem in various analyses, given the grammaticality of other prefixed forms with *go* such as *undergone* and *underwent*.

¹²One may well ask why impoverishment could not be used for *stride* to delete the offending feature $[\alpha]$ so that no derivational trapping occurred. Under the containment analysis, it would have to be that $[\alpha]$ is deleted in the context of [PTCP]. However, this would lead to internal inconsistency in the grammar, which

In summary, the *stride* gap arises because of a derivational trapping situation within a morphophonological rule. The particular analysis provided for the triggering of rules is restrictive, owing to its feature containment approach to participles and preterites.

It is worth noting that this analysis does actually invoke the notion of ‘no default’, though it is relativized specifically to the *-en* class of irregulars. That is, there is default realization for both roots and for participial morphemes, and in the absence of diacritic features, no morphophonological rules will be triggered. However, as soon as a diacritic feature sends the derivation down a path, if there is no default (such as ‘no change’), then a trapping effect will obtain. This trapping effect comes out naturally from the bifurcation assumed here between *conditions on triggers* and *conditions on operands* as it relates to morphophonological rules.

4.1.2 Extensions

From the current vantage point, it is not surprising that cross-linguistically, inflectional gaps arise when morphemes have default realizations but there is some degree of morphophonological complexity in the system. This falls out naturally from the separation of default exponence due to Vocabulary Insertion from the derivational trapping that can occur in morphophonological rules.

Some other cases from the literature are indeed morphophonological; see especially Yang 2016 for some discussion of Spanish and Russian examples. The Spanish verb *abolir* (along with a few other verbs) is gapped in a way that implicates the morphophonology, with speakers not accepting the first person singular indicative as *abolo* or *abuelo*. Morphophonology is also implicated in the well-known Russian phenomenon whereby certain verbs lack forms for nonpast first-person singular (Halle, 1973). While I do not work out accounts for these phenomena here, the hope is that the ‘derivational trapping’ approach taken here for the *stride* gap extends to other cases.

This section applied the logic of derivational trapping to analyze a specific morphological

needs to produce *strode* for the preterite, not *strided*. The inconsistency arises because the conditions for triggering the impoverishment rule would also be met for the preterite, given the logic of underspecification.

gap. It was shown how a containment approach in combination with a certain formulation of morphophonological alternations derives the patterns we observe. In the next section, I pivot to a different topic in which derivational trapping also plays a role: movement to coordinated elements.

4.2 Coordination and Postsyntactic Movement

Another type of phenomenon that can be explained in terms of derivational trapping comes from postsyntactic movement to coordinated elements. In particular, cases in which a process refers to properties of coordinated elements can be disrupted when conditions on triggers are met for one conjunct but not another. This is due to an across-the-board (ATB) constraint on rule application in coordinate structures, which dictates that the same operation must be triggered for each conjunct in order to execute the operation for each. If the operation is not triggered ATB, then the result is a derivational trap.

Distinguishing between the triggering of a rule and its execution allows us to express ATB satisfaction in a novel way. In an SPE-style rule system in which rules apply when their conditions are met and otherwise do not, it is difficult to accommodate apparent ATB violations. In this section, however, I illustrate how the distinction between the triggering conditions on the rule and its execution allows us to refine the ATB constraint in a way that captures putative violations.

I propose that the ATB constraint is satisfied specifically when a rule is triggered for each conjunct; if a rule is triggered, it must be executed. Apparent violations can then arise when a rule is triggered, but different sub-rules apply to each conjunct. The type of sub-rule of interest in this section is *null change*, where the input to the rule is identical to the output. This will occur only when the rule is truly *optional* – not when the rule is syntacticosemantically conditioned. (11) provides a schema for this type of rule.¹³

¹³I remain agnostic as to the locus of external sociostylistic conditioning factors in cases of optionality. In principle, (11) can either be stated in terms of a variable rule with conditioning factors built in or in terms of a completely optional rule, whose outputs are regulated by the system of language use. See Embick 2008 and references therein for relevant discussion.

(11) If α holds, perform R

R : Optionally, null change.

Else: $A \rightarrow B$

If optional application of postsyntactic rules is encoded as in (11), then an optional rule can apply ATB in coordinate environments, with the appearance that a rule has applied to one but not the other. In this type of case, R will be performed; the *null change* option will be executed for one conjunct, while the elsewhere change will be executed for the other.

I first illustrate the basics of the ATB constraint with French preposition contraction (Section 4.2.1), which has been discussed elsewhere in the literature (Miller 1992; Embick and Noyer 2007; Hoffherr 2012; among others). I then juxtapose the French case with novel evidence from Italian as well as evidence from Brazilian Portuguese (Section 4.2.2), in which it is demonstrated that optional rules give rise to apparent violations of the ATB constraint. In Section 4.2.4, I explore some differences between postsyntactic movement and coordination resolution. Section 4.2.5 offers concluding remarks on coordination and ATB effects.

4.2.1 On French preposition contractions

In this subsection, I illustrate the basics of a derivational trapping conception of ATB effects by exploring the patterns of French preposition-determiner contractions. In the following subsections, I contrast the behavior of French prepositions with a subset of those in other Romance languages, which reveal how the current format of rules can capture apparent ATB violations.

Miller (1992); Embick (2007b), and others have noted a striking phenomenon in French in which definite determiners are at the intersection of conflicting processes. The first process cliticizes the definite marker to vowel-initial elements that immediately follow it; there is thus a contrast between *le chat* ‘the cat’ and *l’arbre* ‘the.tree’ (**le arbre*). The second process results in the definite marker contracting with a preceding preposition (with certain combinations) such that they come to be in the same complex head, which produces e.g. *du*

chat ‘of.the cat’ (rather than **de le chat* ‘of the cat’). Embick suggests that cyclicity dictates that the cliticization of the article occurs prior to the formation of the P-D contraction, explaining why the first process and not the second applies in e.g. *de l’arbre* ‘of.the.tree’. However, in cases of a preposition being followed by a coordinate DP expression, complexities arise:

(12) J’ai parlé... (I spoke...)

- | | | | |
|----|--|----|--|
| a. | à la mère et la fille.
to the mother and the girl | d. | *à la fille et le garçon.
to the girl and the boy |
| b. | *au père et la mère.
to.the father and the mother | e. | *au père et le garçon.
to.the father and the boy |
| c. | *à le père et la mère.
to the father and the mother | f. | à la fille et l’autre garçon.
to the girl and the.other boy |

(modified from Embick 2007b, 332, originally in Miller 1992)

As Embick points out, (12-a) indicates that DP coordination under a preposition is syntactically well-formed. However, the result of coordination in (12-b)-(12-e) is ungrammatical because the contraction of P and D is triggered by at least one conjunct. I adopt Embick’s claim that P-D contraction involves a Lowering operation in which P adjoins to the head of its complement when the conditions on D are also met. For coordinate structure, I adopt – as we did in Section 3.2.3 – the view that conjuncts are treated in ‘parallel’ for purposes of postsyntactic operations (following Kramer 2010). For (12-b) then, we get something like (13). Coordinated elements are linearized with respect to each other at the very late stage of chaining, where the conjuncts are ‘pulled apart’ (Kramer, 2010). This means that conjuncts are processed in parallel at the point when * adjacency is assigned between e.g. heads and phrases.

$$(13) \quad P * \begin{bmatrix} D[\text{DEF}] \textit{père} \\ D[\text{DEF}] \textit{mère} \end{bmatrix} \begin{array}{l} \Leftarrow \textit{Lowering triggered} \\ \Leftarrow \textit{Lowering not triggered} \end{array}$$

The ATB constraint fails to be satisfied in (13) because Lowering is triggered by one conjunct but not the other. Consequently, Lowering cannot be executed even though it has been triggered, causing a crash. This is a type of derivational trap.

By this logic, the example in (12-e) should have a corresponding grammatical version, since both conjuncts trigger Lowering, and both conjuncts meet the conditions: it should be *au père et au garçon* ‘to.the father and to.the boy.’ This is indeed grammatical, though it is not clear whether this is coordination between two PPs or two DPs. Interestingly, though, a parallel exists in Brazilian Portuguese, where there is clearer evidence for the coordination of two DPs when the second conjunct appears with a preposition. As observed by Nunes and Ximenes (2009), inflected infinitives in Brazilian Portuguese bear plural agreement for examples such as (14), in which agreement appears to be with two conjoined DPs despite the appearance that two PPs are conjoined.

- (14) Ela não pensou **no** João e **na** Maria viajarem (junto com eles).
she not thought in.the João and in.the Maria travel.INF.3PL (together with them)
‘She didn’t think about John and Mary traveling with them.’

(emphasis in original, Nunes and Ximenes 2009, 191)

French preposition-determiner contraction illustrates the effects of the inability to execute a postsyntactic rule ATB. In the next section, I contrast obligatory contraction with optional contraction in Italian and Brazilian Portuguese.

4.2.2 Italian and Brazilian Portuguese preposition contractions

While Italian and Brazilian Portuguese exhibit similarities with French with respect to preposition-determiner contractions, they also exhibit apparent violations of the ATB pattern. I first demonstrate this with novel data from Italian, offering a proposal that connects the apparent violation to optionality of rule application. I then show how this analysis extends to Brazilian Portuguese.

Italian, like French, has a set of prepositions that obligatorily appear together in the same word as adjacent definite articles (15); these prepositions include e.g. *di* ‘of’ and *a*

‘to’.

- (15) Ho parlato {al / *a il} ragazzo.
have.1.SG spoken to.the / to the boy
‘I spoke to the boy.’

These prepositions display a pattern of (un)grammaticality similar to the French ones. Two conjoined nominals can appear as the complement of a preposition when no interaction with D would be expected for either nominal in isolation. This is illustrated for indefinites (16).

- (16) Ho parlato con un ragazzo e una ragazza.
have.1.SG spoken to a boy and a girl
‘I spoke to a boy and a girl.’

When at least one conjunct meets the conditions for interaction with the preposition, it is impossible to have the second conjunct appear only with its definite article and no preposition (17), and it is not possible to keep the definite morpheme separate from the preposition for both conjuncts. Note that this holds true even if both nominals have the same features and would appear with the same preposition in isolation (17-c).

- (17) Ho parlato (I spoke)...
- | | |
|---|---|
| a. *a il ragazzo e la ragazza.
to the boy and the girl | c. *alla ragazza e la donna.
to.the girl and the woman |
| b. *al ragazzo e la ragazza.
to.the boy and the girl | |

This is parallel to the French pattern discussed above; however, another preposition – *con* ‘with’ – turns out to exhibit different behavior. This preposition in Standard Italian does not *require* co-occurrence of the preposition with the definite in the same word; however, for some speakers, there is an option to contract the preposition with the article. Given what has been said about conflicting requirements of conjuncts, we might expect that the uncontracted version of *con* should allow nominal coordination with no repeated preposition, while the contracted version should not. But this is not what happens – both are actually

possible. The example in (18-a) demonstrates this for the uncontracted version, while the examples in (18-b)-(18-c) demonstrate this with the contracted version. Surprisingly, for the contracted form, the identity of the second conjunct (with respect to e.g. gender) does not matter.

- (18) Ho parlato (I spoke)...
- a. con il ragazzo e la ragazza.
with the boy and the girl
 - b. col ragazzo e la ragazza.
with.the boy and the girl
 - c. colla ragazza e il ragazzo.
with.the girl and the boy

It seems implausible that speakers memorize *con* as being lexically exceptional – triggering a closest conjunct-like effect – just for the purposes of coordination. It also seems unlikely that a learner should infer that the contraction of *con* should occur in a different way (e.g. ‘leaning’) that allows it to circumvent the ATB constraint (though see Nunes and Ximenes 2009 for this type of analysis of Brazilian Portuguese).

I propose that the relevant dimension is the *optionality* of contraction. Recall that *con* allows both contracted and uncontracted versions in the context of definites. What matters is how this optionality is encoded in the grammar. More concretely, I propose that the contraction rule for *con* is always triggered in the context of D[DEF]. The apparent non-application of the contraction rule is then actually a null change. As a result, the rule can be triggered for each conjunct, with different sub-rules applying for each conjunct. This is sketched as follows:

- (19) a. When $P * DP[DEF]$, perform R
- R : Optionally, if $P = con$, no change
- Else: Lower P
- b. $P * \begin{bmatrix} D[DEF] \\ D[DEF] \end{bmatrix} \begin{matrix} \Leftarrow Lowering triggered (change) \\ \Leftarrow Lowering triggered (no change) \end{matrix}$

Because the operation *R* is triggered for *con* for both conjuncts, the ATB constraint is satisfied for both even if one of the conjuncts does not contract. This analysis thus explicitly connects optionality to apparent ATB violations.¹⁴

Confirmation for this approach comes from Brazilian Portuguese (BP). Recall from the previous subsection that a BP agreeing infinitive in an example like (20) agrees as if coordination is at the DP level, despite what looks *prima facie* like two coordinated PPs.

- (20) Ela não pensou **no** João e **na** Maria viajarem (junto com eles).
 she not thought in.the João and in.the Maria travel.INF.3PL (together with them)
 ‘She didn’t think about João and Mary traveling with them.’

(emphasis in original, Nunes and Ximenes 2009, 191)

In BP, contraction of certain preposition-determiner combinations are obligatory when the coordinated DPs are direct complements of the preposition (21). However, this does not hold of infinitival environments (22), where, according to Nunes and Ximenes, contraction is optional and is conditioned by register, with the uncontracted version being more formal. The optionality is maintained with infinitival cases for two coordinated DPs (23).

¹⁴Unfortunately, one of the predictions of this account is incorrect. The prediction is that when a definite and an indefinite are conjoined under *con*, the result should be ungrammatical (irrespective of whether contraction occurs), because the rule should be triggered for the definite but not the indefinite. This is not borne out:

- (i) Ho parlato con il capo e un altro operaio.
 have.1.SG spoken with.the boss and an other worker
 ‘I spoke with the boss and another worker.’

A related situation holds for nominals that are definite but do not take the definite article, namely, those kinship terms that, when possessed and singular, take no definite article (see e.g. Maiden and Robustelli 2014, 162-163). Contraction is not expected to be triggered with these, and yet they are grammatical in a coordinate phrase with a definite that is expected to trigger the contraction rule.

- (ii) Ho parlato col ragazzo e mia sorella.
 have.1.SG spoken with.the boy and my sister
 ‘I spoke with the boy and my sister.’

This may suggest that the morphophonological account is empirically better grounded, though it remains implausible given the question of how this would be learned.

- (21) *Eu votei {no Pedro / *em o Pedro}.
 I voted in.the Pedro / in the Pedro
 ‘I voted for Pedro.’ (Nunes and Ximenes, 2009, 193)
- (22) Eu pensei {em os / nos} meninos fazerem a tarefa.
 I thought in the / in.the boys do.INF.3.PL the job
 ‘I thought about the boys doing the job.’ (Nunes and Ximenes, 2009, 199)
- (23) Ela não pensou em o João e a Maria viajarem.
 she not thought in the João and the Maria travel.INF.3.PL
 ‘She didn’t think about João and Maria traveling.’
 (Nunes and Ximenes, 2009, 197)

If the analysis of Italian *col* versus other prepositions is correct, then we can make parallel predictions for Brazilian Portuguese. First, we predict for the environment in which contraction is obligatory, the second conjunct cannot appear only with a determiner and no preposition (analogous to the earlier French examples). This is indeed borne out:

- (24) Eu votei no João e {*a / ✓na} Maria
 I voted in.the João and the / in.the Maria
 ‘I voted for João and Maria.’ (Nunes and Ximenes, 2009, 196)

Crucially, we predict that it should be possible for the infinitival context – where contraction is optional – to contract but have the second conjunct lack a preposition. This too is borne out (note too that the inflected infinitive remains plural):¹⁵

- (25) Ela não pensou no João e a Maria viajarem.
 She not thought in.the João and the Maria travel.INF.3.PL
 ‘She didn’t think about João and Maria traveling.’
 (Nunes and Ximenes, 2009, 206)

This falls out naturally from the current account. If optionality is encoded in the same way as it is in Italian, then apparent non-application is actually i) a rule being triggered, followed by ii) null change. The ATB constraint is thus satisfied in (25), with both conjuncts

¹⁵The pattern observed for the preposition *em* in (20)-(25) is replicated in the paper by Nunes and Ximenes (2009) for *de* ‘of’, as well.

triggering the rule that *can* produce contraction, while the second one optionally does not.¹⁶

In contrast to the analysis offered here, Nunes and Ximenes (2009) offer a ‘late’ morphophonological analysis for (25) that ensures that their parallelism requirement for conjunction is not violated. This suffers from the same problem mentioned above for *col*; it is not clear how a learner would identify that the contraction should happen ‘later’ than other types. In contrast, it should be clear to the learner that contraction for prepositions in this configuration is optional. Thus the evidence in both Italian and Brazilian Portuguese points to the relevant factor being optionality and not morphophonology.

However, the ‘late’ morphophonological analysis does seem to be appropriate for some cases where the evidence to the learner is clearer. This is discussed in the next section.

4.2.3 Spanish preposition contraction

Preposition contraction in Spanish occurs in a narrow set of circumstances. The article *de* ‘of’ contracts only with the definite article *el* to produce the contracted *del*. This contraction is obligatory.

- (26) la temperatura {del / *de el} aire
the temperature of.the of the air
‘the temperature of the air’

If optionality were the only way of circumventing ATB constraints, then we would predict that DP coordination should be ungrammatical with an unrepeated preposition in the second conjunct. But this is not borne out (27).

- (27) la temperatura del aire y la tierra
the temperature of.the air and the earth
‘the temperature of the air and the temperature of the earth’

¹⁶German also has preposition-determiner contraction. In German, both uncontracted and contracted versions of the same preposition occur for certain preposition-determiner combinations. However, it would be incorrect to characterize this contraction as completely optional (see, for example, Schwarz 2009 on the role of definiteness semantics in contraction). Given that this type of contraction is subject to semantic considerations, it is not optional in the relevant sense. Nevertheless, Hoffherr (2012) reports that it is possible in some contexts to amalgamate while omitting a preposition from a second conjunct. I leave this issue to future research.

This appears to be a genuine difference between Spanish and the other Romance languages discussed here. Why should this be the case?

I propose that Spanish preposition contraction differs from the others in another important way: it is restricted to an environment which can be defined morphophonologically. What I mean by this is that contraction occurs only with the definite article *el*, regardless of whether *el* heads a nominal that is masculine or feminine. While the form *el* is typically recognized as the masculine singular, *el* is also the formal realization of the feminine singular article (usually *la*) when it immediately precedes a stress-initial noun beginning with /a/ (see Harris 1987). That the noun is still recognized as feminine can be seen on feminine agreement on postnominal adjectives; observe the difference for the masculine noun (28) and the feminine noun in (29-a) which both take *el*. As observed by Bonet et al. 2015 and others, if there are intervening prenominal adjectives between the determiner and an *a*-initial noun, the article becomes *la* instead (29-b).

(28) a. el aire fri-o
 the air.M cold-M
 ‘the cold air’

(29) a. el arma nuev-a
 the weapon new-F.SG
 b. la nuev-a arma
 the new-F weapon
 ‘the new weapon’

(Bonet et al., 2015, 32-33)

I follow Harris (1987) in assuming that the feminine *el* is derived morphophonologically and is not featurally mismatched with its feminine noun. Observe now that both masculine and feminine *el* require contraction with *de*:

(30) a. la temperatura {del /*de el} águ-a
 the temperature of.the of the water.F
 b. la temperatura {del /*de el} aire
 the temperature of.the of the air.M

No other preposition-determiner combination contracts: *de los* ‘of the.M.PL’ ; *de la* ‘of

the.F.SG' ; *de las* 'of the.F.PL'. Given the cross-cutting of the masculine and feminine *el* with respect to contraction, the rule is best characterized as being sensitive to the *form* of the article. Assuming late realization, a learner should therefore be unable to perform contraction until a later stage of the derivation. I follow Nunes and Ximenes (2009) in their assumption that late morphophonological operations are impervious to ATB conditions; it is thus for this reason that Spanish allows conjunction with an amalgamated form and no repeated preposition.

The prediction is that no repeated preposition should be necessary for either masculine *el* or feminine *el*. This is borne out (31).

- (31) a. la temperatura del aire y la tierra
the temperature of.the air and the earth
'the temperature of the air and the temperature of the earth'
- b. la temperatura del agua y la sangre
the temperature of.the water and the blood
'the temperature of the water and the temperature of the blood'

In summary, Spanish is different from French, Italian, and Brazilian Portuguese in allowing an apparent ATB violation that cannot be explained by appealing to optionality. This difference correlates with how the triggers are defined in Spanish; that is, they are defined morphophonologically. Consequently, contraction rules must apply late, at a point in the derivation where the ATB constraint is no longer operative.

4.2.4 Coordination resolution is different

Mismatch in coordination is a big topic to which I cannot do full justice here. But it is worth pointing out the distinction between ATB vs. resolution effects as they relate to derivational trapping.

To take one example, coordination resolution behavior for gender seems to neutralize information about mismatches between conjuncts, such that agreement is with a resolved feature value, rather than being altogether impossible because of conflicting requirements of each conjunct. The phenomena are better known from gender resolution on predicative ad-

jectives (see e.g. Corbett 1991), but also occur elsewhere, such as in postnominal adjectives in Romance in so-called hydra constructions (on which, see e.g. Bobaljik 2017 and references therein). An example of one such hydra in Italian is given in (32); observe that coordinating a masculine and feminine results in masculine (plural) agreement on an adjective, rather than outright ungrammaticality, as might be expected due to the conflicting requirements of gender agreement from each conjunct.

- (32) (Gli uccelli hanno) il dorso e la testa **ner-i**.
 the birds have the.M.SG back.M.SG and the.F.SG head.F.SG black-M.PL
 ‘(The birds have) a black back and a black head.’

This is an issue of agreement resolution, on which much ink has been spilled (see Corbett 1991; Dalrymple and Kaplan 2000; King and Dalrymple 2004; Börjars and Vincent 2006; Wechsler 2008; Adamson and Šereikaitė 2019; among many others). Agreement resolution seems to access a single value for the entire conjunct, rather than consider the mismatch, and this value is determined via some principle such as markedness. It is thus not subject to the ATB constraint.

However, non-resolving agreement with coordinate structures can result in issues of the kind seen in the case of French P-D contraction. For example, in cases of English disjunction, for many speakers, neither resolution nor closest conjunct agreement (for some speakers) appears to work in cases of feature mismatch. As is known (e.g. Sadler 2011 and references therein), syncretism or neutralization in such examples allows for well-formed expressions (33-a), but when the agreement reflexes of the conjuncts conflict, there is often no well-formed reflex (33-b). Note that there is nothing ill-formed about the disjunction itself, as (33-a) illustrates, suggesting it is indeed the agreement that causes the disruption in (33-b).

- (33) a. Either he or I had to go.
 b. *Either he or I is/am/are going.

The question remains open regarding what exactly distinguishes cases of resolution from

cases where conflicts results in outright ungrammaticality. But the intuition is that, considered separately, conjuncts for which the conditions on triggers are met for one but not both conjuncts leads to problems, but no such issue arises when the coordinate structure can be considered as a whole post-resolution.

4.2.5 Conclusion

We have seen in this section that postsyntactic rules that affect coordination are subject to an ATB constraint. While I am not the first to identify ATB effects in coordination, the account here, which separates triggering conditions from a rule's execution, captures ATB violations in terms of derivational trapping, but also permits certain patterns of apparent ATB violations.

4.3 English Possessive Pronouns

In this section, I demonstrate another type of postsyntactic disruption, which is connected to the formation of English pronominal possessors such as *their* and *our*. I argue that these are formed through postsyntactic movement of the possessive D identified with the Saxon genitive 's, and that the nature of this movement is such that derivational trapping arises when the possessor belongs to a larger structure (e.g. **[one of them]'s books*/**[one of their] books*).

As is well-known, English (standard) varieties use special possessor forms of pronouns rather than adding the Saxon genitive -s: hence it is *their book* and not **them's book*. However, once the pronoun is contained within a slightly larger phrase, such as a partitive, issues

arise (34), with neither the irregular possessive pronoun nor the Saxon genitive sufficing.¹⁷¹⁸

- (34) Mary and Lisa have interesting but different tastes in books. I challenge you to read:
- a. *[one of them]'s books (cf. one person's books; one of the two people's books).
 - b. *[one of their] books (under the relevant interpretation of one person's books, not just one book).

This pattern is striking, given that the possessive *-s* (or its $-\emptyset$ allomorph) is known for its insensitivity to what it leans on, including verbs (*the woman I know's hat*), prepositions (*the man I spoke with's hat*), etc.¹⁹

It is worth noting that these partitives have no issue with the contracted form *'s* – as in *one of them's here* – indicating there is no inherent problem with affixes leaning on the pronoun.

One intuition about the ungrammaticality of (34) is that the pronoun is ‘too close’ to the possessive morpheme to ignore for the purposes of allomorphy, yet at the same time, it is ‘too far’ to interact in the same way. This property is not confined to the partitive; possessor phrases are also infelicitous when a pronoun is the complement of a postnominal preposition that is either the complement of or is adjoined to the head noun:

¹⁷There is an underexplored issue with number in examples similar to (34). If the head noun is singular, the examples sound markedly odd (i). However, (34) indicates that the pronominal issue remains when the number confound is controlled for. Similar number-related issues are discussed by Lowe (2016) and references therein.

- (i) Mary and Lisa each have one book. I challenge you to read: ??[one of the women]'s book.
- (ii) Mary and Lisa each have several books. I challenge you to read: [one of the women's] books.

¹⁸It is not clear to me if the same pattern holds for the cases in which no part of the *nP* is pronounced. Some speakers find *one of theirs* acceptable (with the relevant interpretation). Interestingly, *them's* remains impossible here:

- (i) Q: Who do these books belong to?
A: They're definitely one of {(??)theirs/*them's}

¹⁹There is some discussion of avoidance of overly long possessor material in the literature; see e.g. Börjars et al. 2013. This issue of avoidance, however, pertains to processing and not grammaticality.

- (35) a. (I like the pictures of your family members, but we should be talking about:)
 [the pictures (*of them)]’s frames
 ✓[the pictures of your family members]’ frames
- b. (Before we release our software products to the public, we need to deal with:)
 [our latest versions (*of them)]’s defects
 ✓[our latest versions of our software products]’ defects
- c. (If you’re serious about publishing more about British kings, we should talk about:)
 [your books (*about them)]’s issues.
 ✓[your books about the kings]’ issues

Evidence in favor of the ‘too far’ component comes from embedding these pronouns deeper within a possessor phrase, which turns out to be grammatical with the regular Saxon *-s*. I contend that we should consider this a cyclic effect; the *-s* can no longer access information about the morphological identity of the host, and is therefore insensitive to the pronominal status of what it is leaning on:²⁰

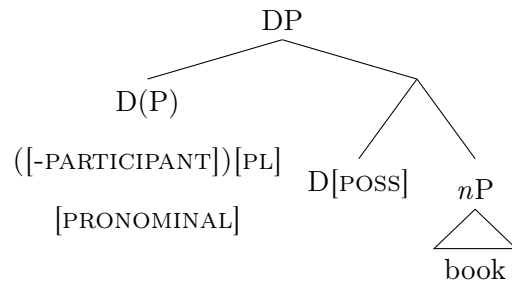
- (36) I want to read:
- a. [a friend sitting next to (one of) them]’s books.
- b. *[a friend sitting next to (one of) their] books.
- (37) a. [the woman who bought your picture of them]’s frames
- b. [the woman who read your book about them]’s criticisms

²⁰This situation is reminiscent of the correlation between syntactic closeness and phonological closeness that contracted auxiliaries in English have, such as *’ll* (see e.g. Zwicky 1970 and Shwayder 2015, 166). The monosyllabic pronunciation of *you’ll* is unavailable for [*the people with you’ll have to go*]; the available pronunciation is with the contracted auxiliary in a separate syllable as the pronoun. However, the difference between the current case and auxiliary contraction is that the latter has no ungrammatical intermediate case – it appears that [*one of you’ll have to go*] is simply ‘too far’ for the monosyllabic version. This seems to be connected to the general availability of the non-monosyllabic version even in the ‘smallest’ structural contexts; that is, both variants of the contracted form are available for *you’ll have to go* and the choice is optional. This is not parallel to the allomorphy of the pronoun occurring with the possessive, which is obligatorily *their book* – it is impossible to say **them’s book*.

My analysis is as follows. For simplicity, assume i) that possessors raise to specDP, per the classical analysis (e.g. Abney 1987); ii) the exponent 's realizes D with a possessive feature [POSS]; and iii) that in the typical case, some 'leaning' process of word formation treats 's as phonologically belonging to the final element of the possessor phrase (such as e.g. Shwayder's 2015 Stray Terminal Grouping). The leaning process is specified for the configuration in which D[POSS] heads the projection to which the possessor DP is the specifier.

The crucial part is that pronouns are D elements which are, on their own, simultaneously 'maximal' and 'minimal' (cf. Matushansky 2006, 86-87). I assume the syntax produces a structure as in (38) for *their book*. For concreteness, I assume pronouns carry a feature [PRONOMINAL] on D.

(38)



I propose that irregular possessive forms such as *their* are derived in two steps; the first one is triggered when the feature [PRONOMINAL] is visible to D[POSS]. This first step adjoins D[POSS] to the possessor on which it identifies the feature [PRONOMINAL]. A second step concatenates the two into a single MWd using the operator \oplus .

The two steps thus refer to separate properties of the element bearing [PRONOMINAL]. The adjunction step targets the specifier in the spec-head configuration, while concatenation targets the possessor as a head. Because lone pronouns are simultaneously maximal and minimal in the Bare Phrase Structure sense (Chomsky 1995), they are capable of satisfying the conditions on operands for both steps.

(39) Adjunction and Concatenation: For a specifier bearing [PRONOMINAL] local to D[POSS], Perform *R*

R: Adjoin D[POSS] to the specifier

(producing in the normal case [[D[PRON]] DPOSS])

Concatenate the SWds D[PRON] and D[POSS] (producing D[PRON]⊕D[POSS])

When the pronominal possessor appears by itself, the structural conditions are met for adjunction, and subsequently, the two adjoined heads can be concatenated as subwords (cf. Matushansky 2006).²¹

In the licit cases where the exponent *'s* leans on a pronoun (such as *the woman who read your book about them's criticisms*), the pronoun is buried within a large amount of structure, and therefore, no [PRONOMINAL] feature is projected to the phrasal level of the possessor; thus the conditions on triggers are not met for the process under discussion, and the leaning option applies as it does for the standard cases.

The ungrammaticality of the 'intermediate' cases arises from disruption in this process. I propose that a [PRONOMINAL] feature 'percolates' to the phrasal level in e.g. partitive expressions such as *one of them*.²² This percolated [PRONOMINAL] feature *triggers* the two-step process. However, while the first step of adjunction of D[POSS] to the possessor phrase is possible, the structure has the wrong properties for subword concatenation, because the pronoun itself is not in the same complex head as D[POSS], which has only been adjoined to the phrase without being adjoined to the pronoun. Because the conditions on triggers on the process have been met, the derivation crashes when the conditions on operands (i.e. the requisite configuration for subword concatenation) are not met.

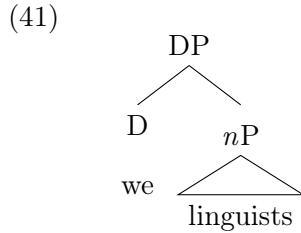
²¹Matushansky (2006) invokes fusion in her discussion of pronominal possessors, but the analysis of these possessors as single, fused morphemes treats all of the resemblances between the possessive and non-possessive pronominal forms as coincidental (*you* ~ *your*; *they* ~ *their*; etc.).

²²I make no strong claim about constraints on percolation, though I assume that the percolation of pronominal features relevant to the adjunction of D[POSS] is bound minimally by phasal C, which prevents the adjunction happening for pronouns inside relative clauses, which are thus subject to the leaning of *'s*, as in *the woman who was sitting next to them's hat*. I believe there is a parallel with *wh*-percolation that figures into discussions of *pied-piping* (though see Heck 2008 for critical discussion of percolation-based accounts of pied-piping).

(40) *SWd Concatenation [[one of them]⊕[POSS]]

Even though the 's exponence of the possessive seems to be a global 'default' of sorts, not even this option (*one of them's*) is available due to the *derivational trapping*.

This account makes a few predictions. First, a pronominal DP like *we linguists* should be illicit as a possessive, assuming an Abney-type (1987) structure as in (41).



The pronominal features should again be visible to D[POSS], triggering the two-step process. While adjunction will be possible, the appropriate conditions for concatenation will not, causing ungrammaticality. This is borne out:

- (42)
- a. We linguists always enjoy our discussions about language.
 - b. No one appreciates us linguists.
 - c. No one appreciates our discussions.
 - d. *No one appreciates [us linguists]' discussions about language.
 - e. ?*No one appreciates [our linguists]' discussions about language. (under the relevant interpretation)

A similar environment can be seen for the derogatory *you people*, which is also illicit as a possessor:²³

²³ I follow Rudin's (1996) suggestion that *you guys* is a compound pronoun for some speakers (not a pronominal DP); as a possessor, it becomes *you guys'* – as in *you guys' house* (also for *you all's house*). Its grammaticality is then expected because the adjunction occurs to a complex head that bears the pronominal feature, so it is eligible to concatenate with it.

For other speakers (myself included), there is a double-marking pattern, as in *your guys' house*. This is clearly not a pronominal DP: if *guys* is modified – as in *you silly guys* – the resultant expression follows the pattern of the pronominal DPs: **your silly guys' house*, **you silly guys' house*.

This double-marking pattern is reminiscent of the reduplicative pattern seen with agent nominalizations of phrasal verbs in English, as in *tab pick-er upp-er* (on which, see McIntyre 2013 and references therein).

- (43) a. I am sick and tired of you people.
 b. I am sick and tired of your shenanigans.
 c. (*I am sick and tired of [you people]’s shenanigans.²⁴
 d. *I am sick and tired of [your people]’s shenanigans. (under the relevant interpretation)

The other prediction is that adjunct material following illicit phrases should remain ungrammatical, because neither adjunction nor linearly intervening elements should interfere with percolation. This is also borne out:²⁵

- (44) a. (?)We should talk about [the books about the monarchs that are already out]’s issues.
 b. *[the books about them that are already out]’s issues.

We thus get another case in which derivational trapping occurs, yielding ungrammaticality when a rule must apply because its conditions on its triggers are met, and yet it cannot apply.

It is worth noting that there is some variation with respect to the acceptability of **one of them’s books* and **one of their books*; I have encountered speakers who find one or either of these acceptable. The analysis presented here is intended to capture the grammar of the speakers who I have consulted that accept neither **one of them’s books* nor **one of their books* (myself included). My speculation is that the formulation of the postsyntactic movement rule is actually under-determined by the learner’s input; it could be that the speakers who find one or either of these acceptable treat the movement that produces the possessive pronoun as the same as the ‘leaning’ option assumed here for the Saxon genitive

Plausibly, the type of structure involved for both *you guys* and *pick up* are such that an ATB condition can apply when they are merged with other types of material, resulting in the double marking we observe. This issue warrants further research.

²⁴Some speakers report that this is not ungrammatical; I assume that these speakers treat *you people* as a compound pronoun; see related discussion in Footnote 23 for *you guys*.

²⁵These data also militate against a prosodic approach whereby there is incompatibility of the Saxon genitive with a pronoun within the same prosodic domain.

(leaving aside the question of the allomorphy for *them's* vs. *theirs*). I leave this issue to further research.

A possible extension of the current analysis is in the domain of coordinated possessors, some of which are known to be ungrammatical with irregular possessive forms in English (see e.g. Bernstein and Tortora 2005, 1229-1231). This holds in particular when the pronoun is coordinated with a full DP (45).

(45) *my and Jack's house / *Jack and my's house (Bernstein and Tortora 2005, 1230)

I would like to suggest for these cases that there is variation across speakers as to whether the process considers the coordinate phrase as a whole or the individual conjuncts. For either grammar, coordinating a pronoun with a full DP should never yield outputs like (45): for the 'whole coordinate phrase' analysis, the two-step process is not triggered, as the pronominal feature would not be available at the level of the coordinate phrase. For the 'individual conjuncts' analysis, the process causes a crash because the conditions on triggers are met once but the process cannot apply across the board (see Section 4.2).

For the 'whole coordinate phrase' analysis, assuming pronominal features are not accessible at the level of the coordinate phrase, the process should not be triggered. It should thus be possible to say *me and Jack's house*, which Bernstein and Tortora (2005, 1230) report is well-formed. In contrast, the 'individual conjunct' speakers should also reject *me and Jack's* (as I indeed do).²⁶

In sum, English pronominal possessors are produced through a postsyntactic movement that gives rise to derivational trapping, causing a crash for complex expressions such as **one of them's books*. The grammatical 'malfunction' arose due to a mismatch in target between one step of a rule and another, which is easily accommodated when the pronoun occurs by itself (producing *their*) but not when the pronoun occurs in a larger structure.

²⁶Various complications arise, which I leave to future research; for example, Bernstein and Tortora (2005) report that *our and their house* is acceptable (though I find it unacceptable with the intersective reading in which their is only one house, belonging to us and them). This is not readily captured under the current approach, though a multidominance treatment seems not implausible.

4.4 Conclusion

In this chapter, we observed several types of postsyntactic disruptions in the domains of lexical gaps, coordination, and possessive constructions. In all of these domains, it is possible for postsyntactic operations to be triggered without being able to be executed; the result is a crash. We observed this with morphophonological rules, movement to coordinated elements, and the dual treatment of an element as a head and a phrase.

In the next and final chapter, I summarize the findings of the dissertation.

Chapter 5

Conclusion

This dissertation investigated the nature of and the particulars of postsyntactic operations like movement and node-sprouting, and it advanced derivational trapping analyses of phenomena described here.

The viability of derivational trapping analyses was demonstrated for inflectionlessness-related phenomena in Bulgarian (Section 2.3.3), BCS (Sections 2.3.4 and 2.4.2), and German (Section 3.4), and also for lexical gaps (Section 4.1), postsyntactic movement into coordinate structures (Section 4.2) and the formation of the English possessive pronoun (Section 4.3). The derivational trapping analyses captured the ungrammaticality of the expressions that otherwise seem like they should be derivable. These analyses capture the absence of an alternative grammatical option being invoked at the point in the derivation where things go awry. There is, for example, no alternative or Last Resort NPE derivation in German with an exceptionally inflectionless adjective like *sexy* ‘sexy’.

As stated in the discussion of lexical gaps in Section 4.1, there is a key prediction of the derivational trapping model, which should be carefully explored further. The prediction pertains to the existence of *defaults*. Specifically, the existence of postsyntactic defaults – default Vocabulary Items, operations, etc. – provides no guarantee that a derivation should converge if the syntactic expression is well-formed. The reason is that, if an operation is triggered and cannot be executed, then it does not matter that the derivation *would* have been licit if only the operation had not been triggered in the first place. Sending a derivation down the ‘wrong’ path leads to a dead end.

This was illustrated for the ungrammaticality of the participial form for *stride* (**stridden*,

**strode, *strided*), which should be composed of morphemes that have default realizations. Despite the existence of the default realization of the root – *stride* – and the default realization of the participial morpheme – *-ed* – even a form composed of the default items (*strided*) remains unacceptable to speakers. This is sensible for a model that permits derivational trapping, but is a challenge to a model in which Last Resort operations are readily available.

While not explicitly described as such, the other case studies involving derivational trapping are analogous, in that they involve two default circumstances that, when thrown together, yield ungrammaticality. For the case of exceptionally inflectionless adjectives in German being ungrammatical with NPE, there is a default circumstance for EI adjectives (=lack inflection) and a default circumstance for NPE (=elide the *nP*), but when the two interact with each other, the result is ungrammatical. This character of derivational trapping is explored to some extent here, but merits further investigation.

With respect to node-sprouting, consistency in the order of postsyntactic operations was maintained throughout, with node-sprouting applying prior to linearly defined movement operations (though see Section 2.3.2 for an interesting complication). In terms of the target of node-sprouting, the phrase was explicitly demonstrated to be a possible target for German adjectival inflection in Chapter 3.2, though it remains mysterious why a learner would opt for a phrasal analysis rather than an MWd analysis. The MWd analysis was also shown to capture effects for e.g. inflected synthetic degree forms, as well as compounds and deadjectival nominals.

The local restrictions on postsyntactic movement were also maintained throughout. The one exception to this is Bulgarian definite suffixation (Section 2.3.3), which for some speakers exhibited an unexpected pattern with EI elements that is not readily accommodated under the system here. It is my hope that the transparency of EI elements for definite suffixation is an illusion that can be better incorporated into a still restrictive theory of postsyntactic movement.

The modular separation of the narrow syntax and the postsyntax was also maintained in

spite of the evidence discussed in Section 2.4, which challenged this conception. To the extent that the claim is correct that exceptional inflectionlessness is (often) only a morphological fact, the account is more consistent with postsyntactic accounts of movement operations, which is also consistent with the view that some of these operations are defined linearly.

Future Directions Many issues have arisen which future research should address. I identify several below.

One of the limitations of the current study is the focus on Indo-European languages (with the exception of the Semitic language Amharic). A diverse sample of Indo-European language data has been explored in the dissertation – Bulgarian, English, German, Modern Greek, Icelandic, Italian, Latin Russian, Spanish, among others – however, given the shared ancestry of the Indo-European languages, it is difficult to determine how well the current theory extends beyond.

Inflectionless elements do exist in other non-Indo-European languages, so extension of the type of research performed here is possible and warranted. For example, Maho (1999, 106-107) reports that Bantu languages have exceptionally inflectionless nouns; future work could thus address phenomena like NPE or LBE if either option exists in Bantu languages.

In terms of the phenomena studied here, the main syntactic category to which inflectionless elements belonged (or were argued to belong) was the adjective (with the exception of the BCS data in Section 2.3.4). One of the reasons for this choice was that one of the other potential lexical categories – verbs – strongly resists or even prohibits exceptional inflectionlessness. The likeliest source of EI verbs – verbal borrowings – are unlike adjectival borrowings in that, to my knowledge, they are always inflected like other verbs in the language (see e.g. Wohlgemuth 2009); otherwise, borrowings enter the language in alternative ways, e.g. as nouns, and languages employ light verb constructions with these borrowings. Why this should be the case is an interesting question to which I have no definitive answer, though as I suggested in Section 2.4, agreement morphology in the verbal domain may behave differently from agreement morphology on lexical categories like *a* and *n*. It may be that the expression of finite agreement is obligatory in a way that concord is not

(cf. Norris 2012, 2014), and therefore, verbs cannot countenance exceptions in the same way as adjectives and nouns agreement can. There is indeed work suggesting there are morphophonological differences between nouns, adjectives, and verbs; see Smith 2011.

An issue with the choice of adjectives is that they exhibit syntacticosemantic heterogeneity: adjectives like *former* do not show the same distributional characteristics as *big* (see e.g. Morzycki 2016). This makes the concept of exceptional inflectionlessness somewhat strange, if adjectives are identified as adjectives (in part) on the basis of their inflection. Nonetheless, the evidence supported the status of EI adjectives as adjectives, raising the question of what extent categorial membership is actually directly attributable to inflection.

More questions arise concerning the status of inflectionless nouns, which were investigated in a few sections of Chapter 2, but not to the same extent as adjectives. Among the more famous questions in the literature concerns indeclinable nouns in Russian and how they are assigned grammatical gender (e.g. Corbett 1991; Wang 2014). This issue could be relevant to the claim in Chapter 2 that inflectionlessness is a morphological fact that cannot affect the narrow syntax. This is because if (any type of) gender agreement occurs in the narrow syntax, and gender assignment is based on morphophonological properties, then the relationship between assignment and agreement must be negotiated in a particular way if the modularity argued for in Chapter 2 is to be maintained. It could be that gender assignment to indeclinable nouns in Russian is not sensitive to indeclinability *per se*, but some other factor(s); see Wang 2014 for in depth discussion of gender assignment to indeclinable nouns. I leave this issue to future research.

Another limitation stems from the extent of speaker variation for various phenomena discussed in the dissertation, which is greater than has been recognized or acknowledged in the literature. For most of the phenomena for which novel data were reported here, multiple speakers were consulted. However, it seems likely that, especially with respect to exceptional inflectionlessness, different speakers may use different representations. This may be expected if learners are working with a sparse amount of input from the Primary Linguistic Data that includes anything about these exceptional forms. In essence, the PLD

would under-determine the grammar of these expressions, giving rise to different analyses that speakers come to. Experimental data could shed light on this variation.

Perhaps surprisingly, the dissertation pursues an analysis of the distribution of agreement morphemes without directly pursuing an analysis of how agreement is established. The analyses presented here are arguably most compatible with a separation between the processes of feature-sharing and the production of agreement morphology; see Norris 2014 for one proposal that distinguishes the two (at least for nominal concord). However, the alternative, where the two are conflated into a single operation, could be another possibility. This second option has also been pursued; see in particular the work of Choi and Harley (2019), who explicitly build feature-sharing directly into their node-sprouting operations.

Many more general questions arise concerning the relation between agreement and node-sprouting which I have not addressed in the dissertation. For example, if agreement is established through an operation Agree triggered by uninterpretable or unvalued features (e.g. Chomsky 2000; Pesetsky and Torrego 2007), then syntactic selection could theoretically be another contributor of inflectionlessness. This raises various issues about e.g. the locality of such selection and whether it is possible to specify that some unvalued features are lexically selected but not others. More seriously, a theory that permits this type of inventory in LIST 1 predicts potential effects of inflectionlessness on syntax that are argued not to exist. The debate about the locus of agreement in the grammar is ongoing; see Legate 2008; Bobaljik 2008; Preminger 2014; Landau 2016b; Kučerová 2018, and many others for some relevant considerations.

Returning to the issue of derivational trapping, it is my hope that this type of account can be extended to other morphosyntactic phenomena, such as the Person Case Constraint (PCC) or the Anaphor Agreement Effect.

While the domain of study in the dissertation has been on inflectionless forms and a few other phenomena, some analyses of other phenomena in the literature do indeed have affinities with the derivational trapping approach. To take one example, consider Coon and Keine's (2019) analysis of the Person Case Constraint (PCC). The PCC is a phenomenon

in some languages in which combinations of two arguments in some syntactic environments have person co-occurrence restrictions (see Bonet 1991; Anagnostopoulou 2003; Béjar and Rezac 2003; Preminger 2011; among many others). One of the best-known versions is called the Strong PCC, for which Basque is representative. As described by Coon and Keine (2019), in Basque ditransitives (in finite agreeing contexts), first and second person arguments are ungrammatical as direct objects when they occur with an indirect object (while third person is fine).

- (1) *Zu-k harkina-ri ni saldu n-(a)i-o-zu
 you-ERG butcher-DAT me.ABS sold 1ABS-AUX-3DAT-2ERG
 ‘You have sold me to the butcher.’ (Laka, 1993, 27)

While the finer details of Coon and Keine’s analysis need not concern us, the key idea of their proposal is that verbal agreement in PCC configurations is with both arguments, but this leads to a feature conflict at the point of morphological realization that causes a crash. Most tellingly for the parallel with the current framework is that they characterize the derivational problem arising from PCC environments as “the configuration with no available morphological output” (Coon and Keine, 2019, 1). They extend this type of analysis to various hierarchical effects with person and number.

It is possible that phenomena that have been described in terms of morphosyntactic or even phonological constraints are alternatively better characterized in terms of derivational trapping. It is my hope that the articulated account of the postsyntax articulated here presents a view that is worthy of discounting, if not adopting.

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