

Chopping up Idioms

Towards a Combinatorial Analysis

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Chapter 1

Introduction

Idioms are a major challenge for linguistics. They baffle any simple account of how the meaning of an expression depends on the meanings of its words and the way these words are combined (cf. Johnson-Laird 2014: vii) because the idiomatic meaning of an idiom is not just a combination of the meanings that the words have when they occur independently of each other (cf. Huddleston & Pullum 2002: 273). In short, idioms do not fit into the common notion of compositionality. As a result, they provide a great testing ground for theories on the syntax-semantics interface.

On top of their syntactico-semantic eccentricities, idioms (from the Ancient Greek *idiōma*: peculiarity, specific property, unique feature) also have a tendency to show idiosyncrasies in morphology, pragmatics, and/or other areas of linguistics. All of these factors complicate the integration of idioms into a grammar, especially a formal grammar. The at least partly unorthodox behavior of idioms conflicts with the generalizations that traditionally form the core of such a grammar. This would not be too much of a headache if idioms were rare. They are, however, extremely pervasive. We use them very frequently, but we are hardly ever aware of it when we do (cf. Johnson-Laird 2014: ix and Keil 1997).

These characteristics alone would already make idioms a worthwhile research topic, but there are many more reasons why we should study them. Idioms are a key factor in the discussion on the proper analysis of relative clauses (see Chapter 2 of this dissertation) and in the argumentation for/against the necessity of constructions (cf. Horvath & Siloni 2017, among others). They are also (mis-)used as an argument for movement (cf. Higgins 1974, Ruwet 1991, and Nunberg et al. 1994, among others), the parallelism of syntactic and semantic selection, the asymmetry of subjects and objects, and hierarchies of thematic roles (cf. Nunberg et al. 1994).

Additionally, idioms are one of the most complicated issues in natural language processing and machine translation. The vast majority of idioms have a literal counterpart, i.e. the string that can be interpreted as an idiom (e.g. *pull strings* \rightsquigarrow_{id} ‘use connections’) can also be interpreted literally (*pull strings* \rightarrow_{lit} ‘pull strings’). For those idioms, the first challenge for the automated parser/translator is to identify them as idioms at all (cf., for example, Sag et al. 2002). And there are even cases in which the appropriate interpretation requires the idiomatic and (parts of) the literal meaning of the idiom at the same time. Those cases are excellent examples of one-to-many relations between form and meaning (see Chapter 5 of this dissertation).

The last argument to study idioms (and non-literal language in general) that I will mention here is that they provide an outlet for the genuinely creative character of human thought and expression. We permanently come up with new ways of saying things in order to get others to listen, or to entertain, flabbergast, provoke, or inspire them. These new ways of saying things also closely mirror how we perceive the ever-changing world around us at a particular point in time (cf. Johnson-Laird 2014: ix). It is for all of the above-mentioned reasons (and presumably many more) that we need an account of how idioms actually work.

The aim of this dissertation is to contribute to the formulation of such an idiom

account by providing parts of the needed empirical basis as well as bits and pieces of such an account itself. The idioms considered here include but are in no way limited to two of the most prominent English verb phrase idioms in the linguistic literature, which have often been taken as evidence for and representatives of two different idiom classes: decomposable idioms and non-decomposable idioms (cf. Ernst 1981 and Nunberg et al. 1994, among others). In their customary citation forms and glosses, these two idioms are: *kick the bucket* ‘die’ and *pull strings* ‘use/exploit (personal) connections/influence’.¹

That these expressions are English verb phrases certainly requires not much of an explanation, as they are all undoubtedly part of the English language and each clearly consists of a verbal head and its nominal complement, which, together, form a verb phrase. But what makes them idioms? To answer this question, the first thing to do, of course, is to define the term *idiom*, which I do in (1).

(1) **Definition of the term *idiom***

An idiom is an expression that consists of at least two words and has a meaning that cannot be compositionally derived from the meanings that the same words have outside of the expression.

This definition is a blend of the idiom definition in Huddleston & Pullum (2002: 273) and the way that Riehemann (2001) uses the term *idiom*. Huddleston and Pullum’s idiom definition reads as follows: “An idiom is an expression larger than a word whose meaning cannot be systematically derived from meanings that the parts have when used independently of each other.” Riehemann (2001: 2) states: “I use the term *idiom* to refer to an expression made up out of two or more words, at least one of which does not have any of the meanings it can have outside of the expression.”

¹The idiom *pull strings* is not to be confused with the idiom *pull the strings* (‘be in control’), as in *Who pulls the strings around here?*, in which the definite determiner *the* is an obligatory part, and its variant *pull X’s strings* (‘be in control of *X*’).

The two expressions *kick the bucket* and *pull strings* clearly meet the idiom definition in (1). Each of them consists of two or three words (a verbal head and a one- or two-word nominal complement) and has a meaning that is not compositionally derivable from the meanings that the words have outside of the idiom. The latter condition is what Nunberg et al. (1994: 492) call the conventionality of idioms. They consider this to be the only property that all idioms share and that distinguishes idioms from collocations. For the conventionality condition of idioms to be fulfilled, it is sufficient if just one of the expression's words has a different meaning within the expression than outside of it. As a consequence, the definition in (1) covers not only *fully-idiomatic* but also *partly-idiomatic* idioms (terms due to Burger 2010), see Figure 1.1 for an adaptation of the outward and inward classification of idioms assumed in Harras & Proost (2005: 280), who use the terms *non-literal* and *semi-literal* instead of *fully-idiomatic* and *partly-idiomatic*.

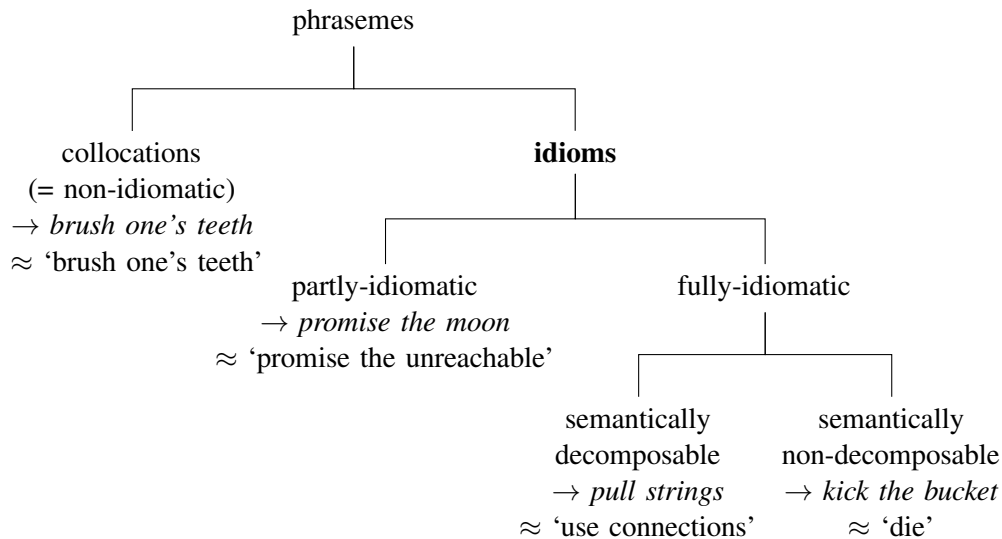


Figure 1.1: Outward and inward classification of idioms

In this classification, idioms i) represent a subclass of phrasemes, ii) are to be distinguished from collocations, and iii) are themselves subclassified into partly- and fully-idiomatic idioms, the latter of which are further subclassified into semantically decomposable and non-decomposable idioms. Just like an idiom, a collocation consists of at least two words, but in contrast to an idiom, a collocation's meaning is compositionally derivable from the meanings that its words have outside of the collocation, i.e. collocations are easily decodable/understandable. In the collocation *brush one's teeth*, for example, *brush* means 'brush' and *teeth* means 'teeth'. In this respect, a collocation is no different from a free word combination, so that a speaker who knows the meanings of the individual words occurring in a collocation will be able to decode that collocation's meaning without knowing the collocation itself. However, that same speaker (before learning about that collocation) might employ an untypical combination of words to encode the concept that is otherwise encoded by that collocation (cf. Makkai 1972: 57).

A partly-idiomatic idiom contains but does not exclusively consist of words that do not have the same meaning within and outside of the idiom. An example of such a partly-idiomatic idiom is *promise the moon*, where *promise* simply means 'promise'. In a fully-idiomatic idiom, in contrast, none of the words have the same meaning within and outside of the idiom. This holds for *kick the bucket* and *pull strings*. Outside of the idioms, neither *kick* nor *the* nor *bucket* means 'die', *pull* does not mean 'use', and *strings* does not mean 'connections'. Therefore, *kick the bucket* and *pull strings* can be classified as fully-idiomatic idioms.

If a fully-idiomatic idiom is semantically decomposable, its meaning disseminates over its words in such a way that each of these words can be assigned an individual idiomatic meaning. An example of such a semantically decomposable idiom is *pull strings*, where *pull* means something like 'use' and *strings* means something like

‘connections’.² If, on the other hand, a fully-idiomatic idiom is semantically non-decomposable, its words cannot each be assigned an individual idiomatic meaning. This is the category that *kick the bucket* falls into.

Idioms have been an issue in linguistics for several decades by now. The research conducted on them has resulted in a wide spectrum of analyses that reaches from accounts that regard an idiom as consisting of one single syntactically indivisible word-level lexical entry (henceforth *single-word accounts*), over accounts that view an idiom as consisting of a single phrase-level lexical entry in which the idiom’s meaning either comes from that phrase³ itself or from the words within it (henceforth *single-phrase accounts*), up to accounts that do not assume a lexical entry for the idiom in its entirety but, instead, consider it to be composed of two or more separate lexical entries that combine according to the conventional rules of combinatorics and each contributes their own meaning to the meaning of the idiom as a whole (henceforth *combinatorial accounts*). The majority of the idiom accounts on this spectrum can be categorized by means of the decision tree in Figure 1.2.

Two of the papers mentioned within that decision tree are also chapters of this dissertation: Weibelhuth et al. (2019) is Chapter 2 and Bargmann & Sailer (2018) is Chapter 4. That is why these two papers are highlighted in bold print. The abbreviations SDIs and SNDIs in Figure 1.2 stand for semantically decomposable idioms and semantically non-decomposable idioms, respectively.

²It is important to note at this point that the semantic decomposability of an idiom cannot be proven by simply finding a paraphrase in which each word corresponds to exactly one of the words of the idiom. To show that an idiom is semantically decomposable it must pass tests like semantic modification of the idiomatic meaning of its nominal part, quantifier variation in the idiomatic meaning of its nominal part, and/or anaphoric references to the idiomatic meaning of its nominal part (see the individual chapters of this dissertation as well as Nunberg et al. 1994).

³The term *phrase* is used somewhat loosely here. What is called a phrase here need not necessarily be a syntactic tree but can also just be some kind of complex unit that includes word- and/or phrase-like subparts.

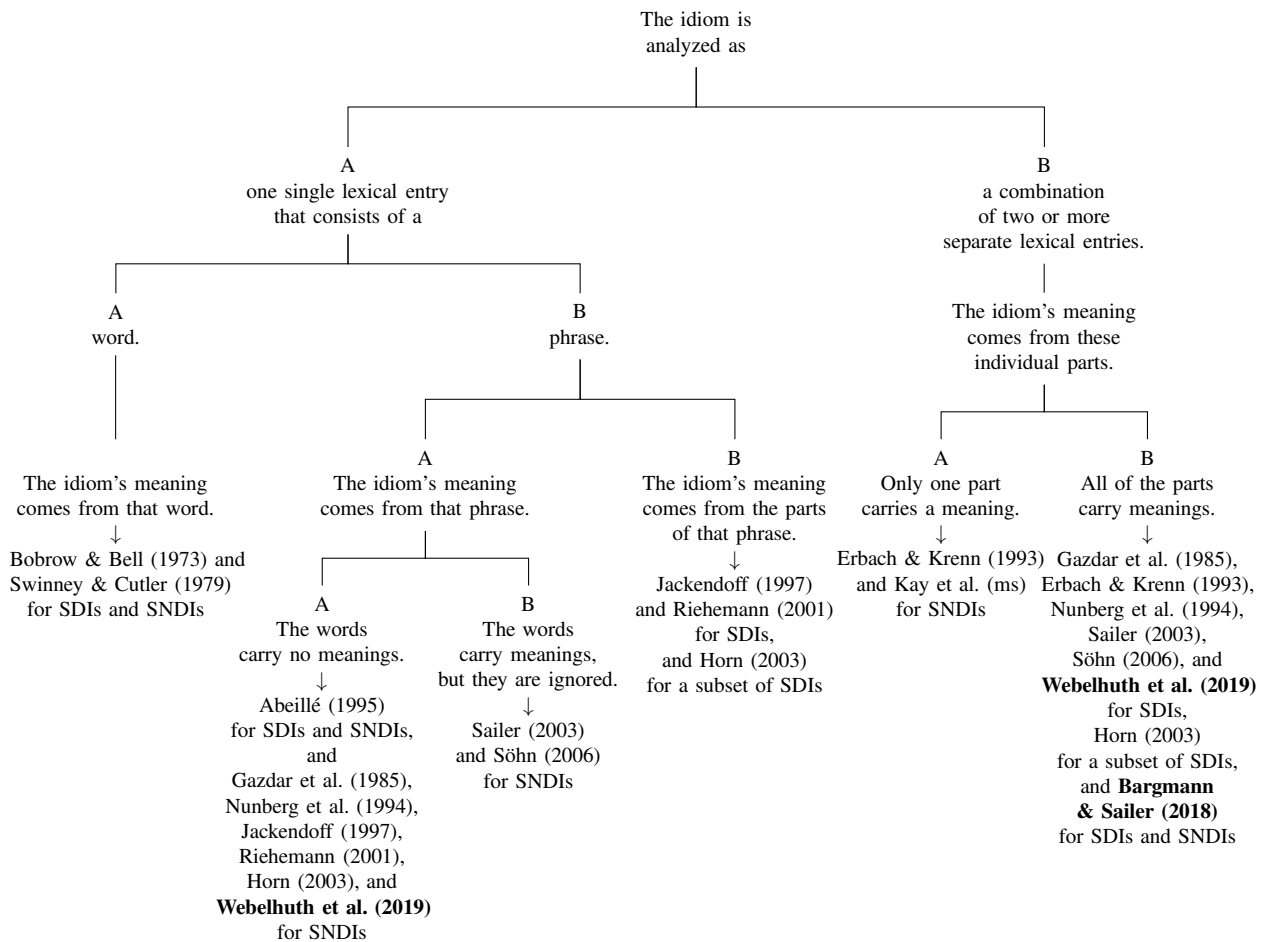


Figure 1.2: Decision tree for the analysis of idioms

The first decision you have to take when investigating an idiom is whether the idiom is to be analyzed as one single lexical entry or a combination of two or more separate lexical entries. If you go for one single lexical entry, you then have to decide between a word-level lexical entry (single-word account) and a phrase-level lexical entry (single-phrase account). If you go for the word-level lexical entry, that single word will obviously have to carry the entire meaning of the idiom.⁴ If you go for the phrase-level lexical entry, the idiom's meaning can come from the phrase itself or from its parts.

⁴Note that a single-word account of idioms is incompatible with the three idiom definitions mentioned above, as they all state that an idiom consists of more than one single word.

If the idiom's meaning comes from the phrase itself, there are two options concerning its parts: Either they do not have any meanings, or they do, but these meanings do not play any role. If the idiom's meaning comes from the parts of the phrase, theoretically, there are two options again: Either all of the parts have a meaning or just some/one. Since the latter option, at least to my knowledge, has not yet been pursued, it is not displayed in Figure 1.2. No matter whether you go for a single-word or a single-phrase account, an analysis that takes an idiom to be a single lexical entry always needs to answer the question of how to account for any syntactic structure in which the idiom's words occur in non-adjacent positions, non-canonical order, or both. I will call this the *flexibility challenge*.

If, on the other hand, your very first analytical decision is that the idiom is the result of combining two or more separate lexical entries, the idiom's meaning will come from these individual words. The only decision left is whether all of the words contribute meaning or just some/one of them (usually the syntactic head). No matter which one of these two options you choose, an analysis in which the idiom consists of separate lexical entries will always include a decision on how these entries combine. I will call that the *compositional challenge*. On top of that, a mechanism is needed to ensure the co-occurrence of the idiom's components. This I will call the *collocational challenge*.

At each decision point of the tree, one of the two available options is marked as option A, whereas the other is marked as option B. Therefore, any decision path in the tree can be indicated via a sequence of As and/or Bs. The path leading to the single-word account, for example, can be indicated via AA. Of course, the taxonomy of existing accounts is not as coarse as Figure 1.2 suggests. The numerous accounts mentioned at the end of the BB path, for instance, are far from being identical, neither in terms of their exact analytical idea nor in terms of their framework or formalism. By not categorizing the different accounts by framework or formalism (or lack thereof),

i.e. by abstracting away from formal tools, Figure 1.2 offers the advantage of providing an overall picture of the landscape of idiom analyses that foregrounds analytical ideas/strategies instead of technical details.

The structure of this dissertation is as follows: Chapter 2 consists of the paper “Idioms as evidence for the proper analysis of relative clauses” (Webelhuth et al. 2019). In this paper, Gert Webelhuth, Christopher Götze, and I first compare the three approaches to (restrictive) relative clauses that have dominated the theoretical literature: the Modification Analysis, the Raising Analysis, and the Matching Analysis. In doing so, we show that assuming the Raising and/or Matching Analysis leads to a total loss of numerous widely agreed-upon empirical generalizations in syntax and morphology. We then subject to scrutiny the traditional view that idiom licensing is a strong argument for Raising and/or Matching and against Modification. An idiom is licensed, so the standard argument goes, if all of its parts form a constituent at deep structure/the point of merge. We show, however, that idioms in relative clauses can be licensed without recourse to literal syntactic reconstruction/movement of the relative clause head if detailed and empirically justifiable assumptions about the internal semantic structure of those idioms are made: The idiom parts each contribute a piece of semantic representation and idiom licensing takes place via collocational restrictions at that semantic representation level. We conclude that this effectively removes idioms as evidence for the existence of Raising and/or Matching derivations of relative clauses and shows that they are fully compatible with a Modification Analysis.

In Chapter 3, “How frozen are frozen idioms?”, I present new empirical observations on the lexical, morphological, and syntactic flexibility of one of the most prominent “frozen” idioms in the linguistic literature: the English VP-idiom *kick the bucket*. These new observations allow for at least two conclusions. First, a number of empirical generalizations concerning the alleged lexical, morphological, and syntactic frozen-

ness of the idiom *kick the bucket* are highly questionable. Second, as a consequence of the first conclusion, analyses that conceive of *kick the bucket* as a single lexical entry consisting of either a fixed phrase or even just one single word are highly implausible. The new findings suggest that *kick the bucket* (and other semantically non-decomposable idioms with a syntactically regular shape) should rather be analyzed as consisting of individual word-level lexical entries that combine according to the standard rules of syntax.

Chapter 4 consists of the paper “The syntactic flexibility of semantically non-decomposable idioms” (Bargmann & Sailer 2018). In this paper, Manfred Sailer and I build on Nunberg et al. (1994), who marked a turning point in the analysis of idioms by moving from a single-phrase account of all idioms to a combinatorial approach for semantically decomposable idioms. We widen the scope of that combinatorial approach and, in the spirit of the findings in Chapter 3, show that it can also be used to analyze semantically non-decomposable idioms, at least as long as they are of syntactically regular shape. We take a semantically non-decomposable idiom of that kind to be composed of two or more separate word-level lexical entries that combine according to the standard rules of syntax but contribute partially identical semantic information. The restrictions on the syntactic flexibility of a semantically non-decomposable idiom, we argue, do not actually follow from its syntactic encoding but from the interaction of their lexical entries’ partially identical semantic contributions with the semantic and pragmatic constraints that hold for the involved syntactic constructions in a particular language. Our analysis is couched in a semantic framework that is particularly well-suited for such cases of lexico-semantic redundancy: Lexical Resource Semantics (Richter & Sailer 2004).

In Chapter 5, which is coextensive with “Modification of literal meanings in semantically non-decomposable idioms” (Bargmann et al. 2021), Berit Gehrke, Frank Richter, and I investigate instances of naturally occurring examples of four semantically

non-decomposable verb-phrase idioms (two English, two German) whose complements contain a modifier that does not lexically belong to the idiom at hand, modifying the literal meaning of a noun in that idiom while the idiomatic meaning of the expression as a whole is preserved. This construction, which was first studied by Ernst (1981), who termed it *conjunction modification*, relies on the hearer perceiving the idiomatic meaning of the whole and the literal meaning of a part of it simultaneously. We examine the possible interpretations and the contextual conditions of these idiom-modifier combinations.

In Chapter 6, “Semantically decomposable idioms in the N-*after*-N construction”, I provide a formal syntactic and semantic account of data in which semantically decomposable idioms like *pull strings* occur in the N-*after*-N construction, as in *Kim pulled string after string to get Alex into a good college*. To this end, I first consider *pull strings* and the N-*after*-N construction individually. I take *pull strings* to be composed of two separate word-level lexical entries: idiomatic *pull* and idiomatic *string*, each with idiomatic semantics but regular morphosyntax. These two lexical entries are subject to specific co-occurrence constraints at the level of semantic representation, where each lexical entry has a unique semantic representation value, on the basis of which it can be clearly identified. My account differs from other analyses of *pull strings* in that it does not require the morphosyntactic plural form *strings* to be present for the idiom to be licensed. N-*after*-N, on the other hand, I analyze as a single phrase-level lexical entry composed of a 3rd-person-singular non-count nominal mother and three daughters: two nominal daughters headed by identical 3rd-person-singular count nouns that the construction forces to stay determinerless and one prepositional daughter: *after*. My account is not only capable of accounting for the morphosyntactic flexibility of *pull strings* and the numerous idiosyncrasies of the N-*after*-N construction, it can also explain the empirically undeniably existing combination of these two.

Chapter 2

Idioms as evidence for the proper analysis of relative clauses

Webelhuth, Bargmann, and Götze (2019)*

2.1 Introduction

Relative clauses (RCs)¹ form a core phenomenon of English grammar and have been the subject of intense theoretical analysis both in traditional and formal approaches to grammar. In Generative Grammar, their analysis has followed the fluctuating ups and downs of the various theoretical assumptions that have characterized the major frameworks and their dialects over the decades.

Three approaches to RCs have dominated the theoretical literature: (i) the Modification Analysis, commonly ascribed to Quine (1960), (ii) the Raising Analysis, suggested in an unpublished paper by Michael Brame and argued for in a publication for the first time in Schachter (1973), and (iii) the Matching Analysis, proposed in early Generative Grammar. With occasional exceptions (e.g. Vergnaud 1974 or Carlson 1977), the Rais-

*This chapter has also been published in M. Krifka and M. Schenner (Eds.), *Reconstruction Effects in Relative Clauses*, pp. 225–262. Berlin: De Gruyter. My contribution to it mainly consists in but is in no way limited to Section 2.3.1.1 “Idiom licensing” and Section 2.4 “Idioms within and outside of relative clauses”.

¹When we speak of RCs in this paper, we refer to *restrictive* RCs (unless explicitly indicated otherwise).

ing and Matching approaches receded along with the trend towards base-generating pronouns, including relative pronouns, in the so-called interpretive semantics of the 1970s (see, for example, Jackendoff 1972). As a consequence, the Modification Analysis reigned the field both syntactically and semantically during the 1980s.

The pendulum began to swing back, however, at the beginning of the 1990s, when Kayne (1994) brought Antisymmetry to the table. Since (i) Antisymmetry is incompatible with the rightward adjunction analysis of RCs, which was perceived to be closely connected to the Modification Analysis,² and since (ii) the Modification Analysis has difficulties with reconstruction phenomena, Modification became unfashionable. Instead, Kayne revived the Raising Analysis, which was subsequently developed in book-length treatments in Bianchi (1999) and de Vries (2002), as well as a number of shorter influential works, e.g. Bhatt (2002) and Sauerland (2003).

Sauerland (2003) argues that the full range of reconstruction phenomena can only be captured if RCs are derivationally ambiguous between Raising and Matching. This claim is contested in Salzmann (2006), where Matching is considered to be sufficient, and in Henderson (2007), who argues the same for Raising. As a result, we find a bewildering disparity of assumptions about the analysis of RCs in the recent research literature:

1. Chomsky (1977): Modification only
2. Kayne (1994): Raising only
3. Sauerland (2003): Raising and Matching
4. Salzmann (2006): Matching only
5. Henderson (2007): Raising only

²It is important to note that the Modification Analysis and rightward adjunction are not at all interdependent and that there have been proposals to combine Modification with an analysis of RCs as complements. See, for example, Schmitt (2000) or Boef (2012).

It is clearly desirable to compare the competing RC-analyses and to only keep the most promising candidate(s). This is the *raison d'être* of this paper, in which we will first sketch the three analyses (Section 2.2) and then point to a large number of pivotal linguistic generalizations that are missed by grammars that analyze RCs in terms of Raising and/or Matching (Section 2.3). We will in effect argue that the loss of generalizations is both so systematic and so immense that by usual standards of argumentation in Generative Grammar, both the Raising and the Matching Analysis of RCs are effectively disqualified from further consideration. This, however, leaves us with the challenge that a few grammatical phenomena, practically all involving reconstruction of one kind or another, have been shown to be difficult to capture without Raising and/or Matching.

We will turn to one such thorny issue in Section 2.4: the behavior of idiomatic expressions in RCs. We will show that idioms in RCs can be licensed without recourse to literal reconstruction of the RC-head. Our conclusion will be that this effectively removes idioms as evidence for the existence of Raising and/or Matching derivations of RCs, which constitutes another step towards showing that such derivations are superfluous in general.

2.2 The Modification, Raising, and Matching Analyses of relative clauses

In this section, we will sketch the three major approaches to the analysis of RCs.

2.2.1 The Modification Analysis

The Modification Analysis³ is pervasive in the literature. It is implicit in Quine (1960) and assumed in Montague (1974), Partee (1975), Chomsky (1977), and Heim & Kratzer (1998). This approach analyzes a DP like the one in (1) as in (2):⁴

- (1) the house which I bought
- (2) $[_{DP} \text{ the } [_{NP} \text{ house}]_i [_{RC} [_{RelPro} \textit{which}_i] [_{IP} \text{ I bought } t_{RelPro}]]]$

The intuition underlying the Modification Analysis in its standard form is that the RC-head (here *house*) and the RC itself denote predicates that combine semantically via intersective modification. The head originates outside the RC and stays external to it throughout the whole derivation. Therefore, it is not ever reconstructed into an RC-internal position. As in traditional grammar, *which* is treated as a relative pronoun (RelPro). There is only one movement operation in Modification: The RelPro moves from its base position into the specifier position of the RC, sometimes pied-piping other material in the process.

³What we call *Modification Analysis* in this paper has, among many other things, often been dubbed *Head-External Analysis* in the literature (see, for example, Bhatt 2002, Salzmann 2006). We prefer the term *Modification over Head-External* to prevent any confusion with the Matching Analysis, which also involves an external head.

⁴In (2) and the other numbered examples in Section 2.2, italics indicate that the string has been moved.

2.2.2 The Raising Analysis

The Raising Analysis was originally proposed in an unpublished paper by Michael Brame as well as in Schachter (1973) and Vergnaud (1974).⁵ It was revived by Kayne (1994), Bianchi (1999), and de Vries (2002). All forms of the Raising Analysis in the literature propose variants of the derivation in (3) for our example DP in (1):

- Base: [DP₁ the_{ext} e [RC [IP I bought [DP₂ which_{int} [NP house]]]]]]
 (3) Step 1: [DP₁ the_{ext} e [RC [DP₂ which_{int} [NP house]] [IP I bought t<sub>DP₂]]]]
 Step 2: [DP₁ the_{ext} [NP house] [RC [DP₂ which_{int} t_{NP}] [IP I bought t_{DP₂]]]]}</sub>

The intuition of this analysis is that the head of the RC takes on a double role. In the base, it appears inside the RC in the relativized position determined by the *wh*-word *which*. In contrast to both traditional grammar and the Modification Analysis, the Raising Analysis does not treat *which* as a relative pronoun but as a relative determiner, namely the int(ernal) determiner, which takes the head of the RC as an NP-complement and forms a DP with it (DP₂).[†] The surface position of the RC-head is empty at the beginning of the derivation. The word order in (1) is the result of two subsequent movements. First, the entire DP₂ *which house* is preposed to the beginning of the RC (Step 1), and then the NP *house* is moved to the left into a position where it enters into a grammatical relation with the ext(ernal) determiner *the*, which selects the RC and the head (Step 2). Because of this derivational history, the head can easily be reconstructed into the RC.

⁵Parts of this section are also part of our contribution to the *Festschrift* for David Pesetsky in celebration of his 60th birthday.

[†]Unfortunately, there is a typo in Webelhuth et al. (2019): The last-mentioned DP is erroneously labeled as DP₁, instead of DP₂.

Given that the RC can be linearly separated from the head NP, see (4),

- (4) Sue wanted to talk about the $[_{NP}$ house] again $[_{RC}$ which I bought].

it is most plausible to assume that the head NP leaves the RC and moves into the complement position of the external determiner, as shown in (3) above.⁶

It is important to observe that in movement step 2 of the derivation in (3) *house* moves out of the RC, despite the fact that RCs are syntactic islands. In order to avoid this, there are also versions of the Raising Analysis (such as Kayne 1994 or de Vries 2002) that do not extract the head NP from the RC, thereby circumventing an island violation. Instead of moving the head out, it is stipulated to move RC-internally. Kayne (1994), for instance, suggests for *wh*-relatives that the head NP moves from the complement position of the RC-internal DP to the specifier position of that DP, see (5).⁷

- (5) $[_{DP_1}$ the_{ext} $[_{RC}$ $[_{DP_2}$ $[_{NP}^{SpecDP_2}$ house] *which*_{int} t_{NP}] $[_{IP}$ I bought t_{DP_2}]]

We will refer to these versions of the Raising Analysis as *RC-internal Raising*. RC-internal Raising analyses face several difficulties. Among these difficulties are case and

⁶An anonymous reviewer states that whether or not sentences like the one in (4) can be taken to be arguments for the head leaving the RC within Raising approaches is “completely dependent on the analysis of extraposition one assumes”, which, she says, entails that “extraposition does not seem to provide evidence in favor of any analysis of RCs.” While we generally agree with the first statement, we disagree with the second one, as most, if not all, of the analyses of extraposition that avoid moving the head out of the RC (RC-internal Raising) face major problems. Two examples of such an analysis can be found in Kayne (1994) and de Vries (2002). In Kayne (1994)’s original stranding account of extraposition, for instance, it is not only the head NP *house* that moves to the left, as suggested in (4), but the entire DP *the house*. As several authors have observed (e.g. Buring & Hartmann 1997, Koster 2000, and de Vries 2002), this analysis is problematic, as the DP does not form a constituent under Kayne’s analysis. This issue, as well as the problem that complex heads with an additional complement pose for this theory (as in *A picture has been issued of the suspect*) is among the numerous problems that Sheehan (2010) points out. She concludes that “additional movements would need to be posited to make *a picture* into a derived constituent. This would presumably involve extraction of the complement PP/CP, followed by remnant movement of DP (meaning that the PP/CP is not, strictly speaking, stranded).” It is fair to say that those additional movements are stipulated for theory-internal reasons only. Furthermore, as Webelhuth et al. (2013) show, de Vries (2002)’s extraposition theory, which relies on specifying coordination and ellipsis and, according to the reviewer, is in principle compatible with any of the three analyses of RCs, runs into serious difficulties.

⁷Superscripts in the bracket notation indicate the structural position of an expression.

agreement facts (see Section 2.3.2 below). To account for them, even proponents of RC-internal Raising have to admit some kind of movement out of the RC, such as covert head incorporation (Bianchi 1999) or feature movement (de Vries 2002). Boef (2012: 147) comes to the conclusion that these additional mechanisms are “all (to a greater or lesser extent) stipulative and not particularly explanatory.” Further difficulties for RC-internal Raising, as we will now show, are head NPs with a complement, the ‘Big Mess’ construction, and extraposition. For the case of head NPs with a complement, consider the sentences in (6):

- (6) a. [PP *Von welchem Popstar*] wurden [RC [_{NP}^{SpecRC} *Nacktbilder* t_{PP}], die
 of which pop star *were* *nude-pictures* *RelPron*
 t_{NP} *gestohlen waren*], ins Internet gestellt?
 stolen *were* *in-the Internet* *put*
 ‘Of which pop star were nude pictures that had been stolen put on the Internet?’
- b. This is the pop star [PP *of whom*] [RC [_{NP}^{SpecRC} *nude pictures* t_{PP}] that had been
 stolen t_{NP}] were put on the Internet.

In (6a), the head NP *Nacktbilder von welchem Popstar* is moved into SpecRC. Hence, no island violation is incurred. In the next step, however, the PP *von welchem Popstar* is *wh*-moved out of the RC into the left periphery of the matrix sentence. We judge the sentence grammatical, yet the RC-internal Raising Analysis still requires material to move out of the RC island. In (6b), the head NP *nude pictures of whom* is only moved into the Spec of the most deeply embedded RC, so that, again, no island violation is incurred. But then the PP *of whom* (the complement to the relational noun *pictures*) undergoes subsequent movement out of this RC into the higher RC. This should induce an island violation, but the sentence is grammatical (judgment due to Bob Levine, p.c.). Note that a Modification Analysis of sentences like those in (6) causes no comparable problems because there the head always remains external to the RC, so that material extracted out of the head is in no way forced to move out of an RC island.

Let us now consider the interaction of the RC-internal Raising Analysis with the ‘Big Mess’ construction (Berman 1974, van Eynde 2007) or, to use the more descriptive terminology of Kay & Sag (2009), the ‘complex pre-determination phenomenon.’

- (7) $[_{AP} \textit{How expensive}] [_{DP} a [_{RC} [_{NP}^{\text{SpecRC}} t_{AP} \textit{car}] \textit{that } t_{NP} \textit{works}]] \textit{can we afford?}$

In the Raising Analysis sketched in (7), the head NP *how expensive car* is moved to SpecRC, and no island violation is incurred. In the next step, the AP *how expensive* is fronted to the left of the DP. Again, this requires the AP to be extracted out of the RC if one assumes that the RC head stays within the confines of the RC.

Finally, consider extraposition (judgments due to Bob Levine, p.c.).

- (8) a. The police showed $[_{RC} [_{NP}^{\text{SpecRC}} \textit{color pictures } t_{PP}] \textit{that had been taken } t_{NP}]$ to every witness $[_{PP} \textit{of everybody who had been at the crime scene}]$.
- b. We should mention just those $[_{RC} [_{NP}^{\text{SpecRC}} \textit{attempts } t_{CP}] t_{R'}]$ to Mary $[_{CP} \textit{PRO to break into the Bank of England}] [_{R'} \textit{that were successful } t_{NP}]$.

In (8a), the relativized head NP consisting of the relational noun *color pictures*, which takes the PP *of everybody who had been at the crime scene* as its complement, has been moved into SpecRC. Subsequently, the PP is extraposed. Under the RC-internal Raising Analysis, this last movement step should incur an island violation, contrary to fact. In (8b), the relativized head NP consisting of the plural noun *attempts*, which takes an infinitival CP as its complement, has been moved into SpecRC. In this case, the infinitival complement as well as the RC have been extraposed. According to the logic of the RC-internal Raising Analysis, this should again undermine the islandhood status of RCs and the corresponding sentences should be ungrammatical, which, however, is not the case. Furthermore, the island violations caused by the movements to the right in (8) are violations of Ross (1967)’s Right Roof Constraint, an otherwise exceptionless constraint in both German and English, as far as we are aware.

2.2.3 The Matching Analysis

The Matching Analysis was originally proposed by Lees (1960, 1961) and Chomsky (1965) and extended by Sauerland (1998). Under a Matching Analysis, the derivation of the DP in (1) is as follows:

- Base: [DP₁ the_{ext} [NP house]_i [RC [IP I bought [DP₂ which_{int} [NP house]_i]]]]
- (9) Step 1: [DP₁ the_{ext} [NP house]_i [RC [DP₂ which_{int} [NP house]_i] [IP I bought t_{DP₂]]]]}
- Step 2: [DP₁ the_{ext} [NP house]_i [RC [DP₂ which_{int} [NP ~~house~~]_i] [IP I bought t_{DP₂]]]]}

Intuitively, the Matching Analysis is a hybrid between the Modification and the Raising Analysis. As in Modification, the head originates and remains external to the RC during the entire derivation. In contrast to Modification, however, the head has an RC-internal counterpart, the so-called internal head. We indicate this by co-indexation. Since the relation between the external and the internal head is not established via a movement chain, each head has to be considered individually. The internal head is obligatorily deleted under “identity” with the external head.⁸ Instead of the R-expression of the external head, the internal head may also contain a pronoun co-referential with that R-expression (see “vehicle change” in Fiengo & May 1994). As in the Raising Analysis, the relativizer is treated as a relative determiner.

⁸Note that for the motivation of this kind of deletion, most Matching accounts usually only hint at a possibly existing analogy with comparative deletion, which, however, is not very well understood either.

2.3 Empirical motivations and problems for Raising and Matching

2.3.1 Two pro(blematic) arguments: idiom licensing and binding theory

2.3.1.1 Idiom licensing

A standard argument in favor of the Raising Analysis is idiom licensing. An idiom (e.g. *make headway* \approx ‘make progress’) is licensed, so the argument goes, if all of its parts form a constituent at D-structure/the point of merge.⁹ Note the following data from Schachter (1973: 31):¹⁰

- (10) a. *We made headway.*
 b. * (The) *headway* was satisfactory.
 c. The *headway* that we *made* was satisfactory.

In (10a), this licensing requirement is met since *headway* is base-generated in the complement position of *make*. In (10b), in contrast, this is not the case (as there is no form of *make*), so the idiomatic reading of *headway* is unavailable. In order to account for the grammaticality of (10c), the Raising Analysis assumes that *headway* is base-generated in the complement position of *make*, just as in (10a), and only later raised to its surface position:

⁹A reviewer wonders why the licensing requirement on idioms should be met at D-structure/the point of merge rather than at LF. The formulation of the licensing requirement in terms of D-structure/the point of merge is a traditional one. It can be found, for instance, in Chomsky (1981: 146, fn. 94), where D-structure is considered to be the “natural place for the operation of idiom rules.” Similarly, Bhatt (2002) claims that idioms need to appear “in the relevant environment at some point in the derivation (minimally point of Merge, maybe also at LF).” With the advent of the Minimalist Program and its move to abandon D-structure, the licensing requirement is often reformulated as a condition on LFs, for “the unitary nature of the idiom must be captured at some other level. In a minimalist theory, the only level available for this is LF, as only this level affects semantic interpretation” (Hornstein et al. 2005), see Munn (1994) or Boef (2012: 163), among many others. As far as we are aware, however, none of these authors attempts to work out a theory detailed enough to handle all the cases discussed in the present work.

¹⁰In (10) and Section 2.3.1.1 in general, italics indicate that the string is part of an idiom.

(11) The [_{NP} *headway*] [_{RC} that we *made* *t*_{NP}] was satisfactory.

Note that the Matching Analysis cannot account for (10c) since it postulates two copies of *headway*, but only the RC-internal one is licensed:

(12) The [_{NP} *headway*] [_{RC} that we *made* [_{NP} ~~*headway*~~]] was satisfactory.

Even though idiom licensing was (and still is) one of the major motivations for Raising, the grammaticality of the sentence in (13) from Salzmann (2006: 43, example due to Henk v. Riemsdijk) is problematic for this approach, as the “D-structure” licensing requirement is not fulfilled for the upper occurrence of *pulled*.

(13) John never *pulled* the [_{NP} *strings*] [_{RC} that his mother told him should be *pulled* *t*_{NP}].

Here, Matching needs to come to the rescue. Under Matching, both occurrences of *pulled* have a copy of *strings* in their respective complement position:

(14) John never *pulled* the [_{NP} *strings*] [_{RC} that his mother told him should be *pulled* [_{NP} ~~*strings*~~]].

Note, however, that neither Raising nor Matching can explain cases in which there is obligatory non-reconstruction, as, for example, in the sentence in (15) from McCawley (1981: 137) and Alexiadou et al. (2000: 12).

(15) Parky *pulled* the [_{NP} *strings*] [_{RC} that *t*_{NP}/[_{NP} ~~*strings*~~] got me the job].

Under Matching, the RC-internal occurrence of *strings* lacks its idiomatic counterpart at the point of merge. Either the RC-internal occurrence of *strings* is not licensed, or it is non-idiomatic. If it is not licensed, the derivation crashes at this point. If it is non-idiomatic, the RC-external occurrence of *strings* cannot be idiomatic either since it is supposed to be identical with RC-internal *strings*. This, of course, causes a severe licensing problem for idiomatic *pull*.

Under Raising, the situation is even worse: It is not only *strings* that lacks its idiomatic counterpart at the point of merge but also *pull*. So, both idiom parts end up unlicensed from the very beginning of the derivation.

2.3.1.2 Binding theory

Let us now turn to the second standard argument for Raising and Matching: binding-theoretic reconstruction. According to Chomsky (1981), anaphors, including reflexives and reciprocals, must be locally bound (Principle A of the Binding Theory). In (16) taken from Schachter (1973), the anaphor *each other*, in its surface position, is not c-commanded by and hence not bound by its antecedent *John and Mary*.¹¹

(16) The [_{NP} interest in *each other*_{*i*}] [_{RC} that *John and Mary*_{*i*} showed *t*_{NP}] was fleeing.

Whereas Raising can resolve the issue by resorting to reconstruction of the head into the complement position of *showed* inside the RC, Matching runs into the problem that the anaphor *each other* in the external copy of the head induces a Principle A violation.

Salzmann (2006: 117) shows that while Raising has problems with (17), a Matching account is technically feasible.

(17) Schicken *Sie*_{*i*} uns [ein Foto von *sich*_{*i*}], das beweist, dass Sie ein wahrer
Send you us a photo of REFL that proves that you a real
 Ferrari-Anhänger sind!
Ferrari enthusiast are

‘Send us a photograph of yourself that proves that you are a real Ferrari enthusiast!’

In (17), the reflexive *sich* needs to get bound by the matrix pronoun *Sie* in order to satisfy Principle A. This is not possible under Raising, as the head, including *sich*, would get reconstructed into the RC, which results in the disruption of the binding

¹¹In (16) and Section 2.3.1.2 in general, italics, on top of the usual co-indexation, indicate that two strings are either co-referential or that one is bound by the other.

relation between *sich* and its antecedent, given that German does not seem to have exempt anaphors, as demonstrated in Kiss (2001). Matching, on the other hand, deletes the RC-internal copy of the head while the external one remains in its initial position, so that Principle A is not violated.

In (18), taken from Sauerland (2003), the head of the RC contains the variable *his*, which, according to standard assumptions and under the given indexing, needs to be bound by the quantifier *everybody* within its c-command domain.¹²

(18) The [_{NP} relative of *his*_{*i*}] [_{RC} that *everybody*_{*i*} likes *t*_{NP}] lives far away.

Under Raising, this structural requirement is met since the head is reconstructed into the complement position of *likes*. Matching, on the other hand, is forced to opportunistically delete the upper occurrence of the head including the pronoun and to reconstruct the lower occurrence back into the c-command domain of the subject of the RC.

Last but not least, let us turn to Principle C effects as discussed in Munn (1994) and Sauerland (2003). Consider the minimal pair in (19):¹³

- (19) a. the picture of *Bill*_{*i*} that *he*_{*i*} likes
 b. * the picture of *Bill*_{*i*} that *he*_{*i*} took

In order to explain the grammaticality contrast between (19a) and (19b), Sauerland (2003), following Carlson (1977), argues for the coexistence of Raising and Matching within one and the same grammar:

¹²Barker (2012) casts doubt on those standard assumptions. Based on “a wide variety of systematic counterexamples”, Barker shows “that in English, quantificational binding does not require c-command”; see Barker (2012) for details.

¹³Sauerland (2003) points to significant speaker variation. For a discussion of the corresponding German data, see Salzmann (2006).

- (20) a. * the [_{NP} picture of *Bill*_{*i*}] [_{RC} that *he*_{*i*} likes *t*_{NP}] (Raising)
 b. the [_{NP} picture of *Bill*_{*i*}] [_{RC} that *he*_{*i*} likes [_{NP} ~~one~~]] (Matching)
- (21) a. * the [_{NP} picture of *Bill*_{*i*}] [_{RC} that *he*_{*i*} took *t*_{NP}] (Raising)
 b. * the [_{NP} picture of *Bill*_{*i*}] [_{RC} that *he*_{*i*} took [_{NP} ~~one~~]] (Matching)

Sauerland claims that (19a) is grammatical because (at least) one of the two approaches (Matching in this case) can generate it: Whereas Raising in (20a) causes a Principle C violation (after reconstruction), Matching in (20b) relies on vehicle change and, thereby, avoids that very problem. (19b), in contrast, is ungrammatical since neither Raising nor Matching is available: Raising in (21a) yields a Principle C violation. Matching in (21b), on the other hand, does not license the idiom *take a picture*.

Let us sum up our discussion of the idiom and binding arguments for the Raising and Matching analyses of RCs: We have seen that neither theory can actually claim to be able to capture all the data that needs to be accounted for. Moreover, Matching draws on arguably undesirable conceptual devices, namely vehicle change and opportunistic deletion.

2.3.2 Morpholexical generalizations lost with Raising and/or Matching

Having discussed the major arguments for Raising and Matching, we will now turn to pivotal linguistic generalizations that are missed by grammars containing one or both of these approaches to RCs.¹⁴ We will start off with morpholexical generalizations and then move on to syntax.

As has already been mentioned, both Raising and Matching crucially take relativizers to be determiners rather than pronouns. As will be shown, this assumption results in the loss of at least the following five morpholexical generalizations:¹⁵

¹⁴Most of the arguments in this and the next section stem from Borsley (1997, 2001) and Heck (2005).

¹⁵A generalization followed by a superscript *R* is only violated by Raising.

1. In German, the *d*-relativizer is paradigmatically isomorphic to personal pronouns, NOT to determiners.
2. In English and German, *wh*-relativizers are surface-homophonous with interrogative pronouns, NOT with determiners.
3. In English, relativizers and personal pronouns, but NOT determiners, are characterized by animacy and case distinctions.
4. A DP heading an A'-chain carries the case assigned to the foot of the chain.^R
5. In German, determiners govern the declension class of nouns and adjectives they co-occur with.^R

We will now go through these generalizations one by one and demonstrate with the help of German and English data how they are missed by Raising and/or Matching.

2.3.2.1 Paradigm isomorphy between German *d*-relativizers and personal pronouns

Consider the following data taken from Heck (2005):

- (22) a. Ich vertraue *den*_{det}/**denen*_{pron} Freunden.
*I trust the/*them friends*
 'I trust the friends.'
- b. Ich vertraue **den*_{det}/*denen*_{pron}.
*I trust *the/them*
 'I trust them.'
- c. die Freunde, **den/denen* ich vertraue
the friends whom I trust
 'the friends who(m) I trust'

In (22a), *Freunden* can only be specified by the determiner *den*, not by the personal pronoun *denen*. In (22b), on the other hand, it is the determiner that cannot function as the complement of the verb, whereas the pronoun of course works perfectly well. As can be observed in (22c) then, the German *d*-relativizer morphologically patterns

with the personal pronoun *denen*, NOT with the determiner *den*. These empirical facts are unexpected from the perspective of Raising and Matching, which, as mentioned above, take the relativizer to unambiguously be a determiner.

2.3.2.2 Systematic surface homophony of *wh*-relativizers and interrogative pronouns

As the embedded question in (23) and the adverbial RC in (24) exemplarily illustrate for German *wo*,

(23) Ich fragte, [_Q *wo* du geboren bist].
I asked where you born are
 ‘I asked where you were born.’

(24) der Ort, [_{RC} *wo* du geboren bist]
the place where you born are
 ‘the place where you were born’

wh-relativizers are systematically surface-homophonous with interrogative pronouns, see Table 2.1 for German and Table 2.2 for English.

Table 2.1: German Relativizers and Interrogatives

Relativizers	Interrogatives	Gloss
<i>wo</i>	<i>wo</i>	where
<i>was</i>	<i>was</i>	which
<i>womit</i>	<i>womit</i>	with what
<i>wieso</i>	<i>wieso</i>	why
<i>weshalb</i>	<i>weshalb</i>	why
<i>warum</i>	<i>warum</i>	why
<i>wie</i>	<i>wie</i>	how

Table 2.2: English Relativizers and Interrogatives

Relativizers	Interrogatives
<i>who(m)</i>	<i>who(m)</i>
<i>where</i>	<i>where</i>
<i>why</i>	<i>why</i>

Despite the fact that *wh*-interrogative pronouns and *wh*-relativizers are systematically identical in surface form, Raising and Matching predict the former to be syntactically simplex and the latter to be syntactically complex. Within these approaches the *wh*-relativizer *wo* in (24) would be analyzed as in (25) and (26) respectively.

(25) der [_{NP} *Ort*], [_{RC} [*wo* *t*_{NP}] du geboren bist]

(26) der [_{NP} *Ort*], [_{RC} [*wo* [_{NP} ~~*Ort*~~] du geboren bist]

This variable degree of syntactic complexity between *wh*-interrogative pronouns and *wh*-relativizers enforces a number of additional stipulations. Kayne (1994: 154, fn.12), for instance, suggests that “*who* could be taken to be a form of *which* that appears under spec-head agreement with a [+ human] NP.”

2.3.2.3 Animacy and case distinctions of relativizers and personal pronouns

English relativizers behave like personal pronouns, and unlike determiners, in that their morphological paradigms are characterized by animacy and case distinctions:

As the first line of Table 2.3 indicates, English 3rd-person-singular personal pronouns display a distinction between the animate forms *he/she* and the inanimate *it*. An analogous distinction holds between the relativizers *who* and *which* in line 2. The determiners *a* and *the* in line 3, in contrast, do not show this distinction. In a parallel fashion, see Table 2.4, English animate relativizers and 1st- and 3rd-person animate personal pro-

Table 2.3: Animacy Distinctions

	animate	inanimate
personal pronouns	<i>he/she</i>	<i>it</i>
relativizers	<i>who</i>	<i>which</i>
determiners	<i>a/the</i>	

Table 2.4: Case Distinctions

	nominative	accusative
personal pronouns	<i>I, he, she, we, they</i>	<i>me, him, her, us, them</i>
relativizers	<i>who</i>	<i>whom</i>
determiners	<i>a, the</i>	

nouns display a form distinction between nominative and accusative case, which the determiners *a* and *the* do not. Again, these empirical facts are ignored by Raising and Matching.

2.3.2.4 Case assignment

As is well-known, a DP heading an A'-chain always carries the case assigned to the foot of the chain. This becomes evident in languages with overt case marking such as German, see (27) and (28).

- (27) Sie fragte, [Q [DP welchen^{acc} Jungen^{acc}] du t_{DP}^{acc} kennst].
she asked which boy you know
 'She asked which boy you know.'

- (28) a. * Sie fragte, [Q [DP welcher^{nom} Junge^{nom}] du t_{DP}^{acc} kennst].
 b. * Sie fragte, [Q [DP welcher^{nom} Jungen^{acc}] du t_{DP}^{acc} kennst].
 c. * Sie fragte, [Q [DP welchen^{acc} Junge^{nom}] du t_{DP}^{acc} kennst].

Since all of the analyses presented in Section 2.2 (Modification, Raising, and Matching) involve A'-movement, they should all respect the above generalization. Under Raising, however, non-subject RCs should display a clash between the case assigned to the RC-head at the bottom of the chain and the case assigned to the RC-head at the top of the chain:

- (29) $\text{Der}^{nom} [\text{NP } \text{Junge}]^{nom}, [\text{RC } [\text{DP } \text{den}^{acc} \text{t}_{\text{NP}}^{acc}] \text{ du } \text{t}_{\text{DP}}^{acc} \text{ kennst}], \text{ kommt auch.}$
the boy whom you know comes also
 'The boy who(m) you know will also come.'

While the RC-head in (29) is assigned accusative case in its base position (the complement position of the internal determiner *den*, together with which it forms the DP *den Jungen* in the complement position of *kennst*), it should also be assigned nominative case by the verb in the main clause. It is thus unexplained why (29) is grammatical but (30) is not, since there should be a case clash in both structures:

- (30) * $\text{Der}^{nom} [\text{NP } \text{Jungen}]^{acc}, [\text{RC } [\text{DP } \text{den}^{acc} \text{t}_{\text{NP}}^{acc}] \text{ du } \text{t}_{\text{DP}}^{acc} \text{ kennst}], \text{ kommt auch.}$
the boy whom you know comes also
 'The boy who(m) you know will also come.'

While Kayne (1994) and Henderson (2007) offer no account whatsoever of these facts, Bianchi (1999)'s approach violates cyclicity (see de Vries 2002: 115) and the ones in Bhatt (2002) and de Vries (2002) are based on ad hoc assumptions and thus lack explanatory force (see Salzmann 2006, Section 1.2.3). Salzmann (2006), Section 1.2.3.3, concludes: "The case problem ... certainly remains one of the strongest arguments against the HRA [Head Raising Analysis]."

2.3.2.5 Declension class

In German, determiners govern the declension class of nouns and adjectives they are in construction with. As can be seen in (31) and (32) respectively, the indefinite article *ein* is followed by the mixed declension, whereas the definite article *der* requires the weak declension.

(31) **ein** [_{NP} *junger*^{mixed} *Angestellter*^{mixed}]
a young employee
 ‘a young employee’

(32) **der** [_{NP} *junge*^{weak} *Angestellte*^{weak}]
the young employee
 ‘the young employee’

This also holds when the NP consisting of the noun and the adjective forms the head of an RC, see (33) and (34):

(33) **ein junger Angestellter, der** befördert wurde
a (young) employee who promoted became
 ‘a (young) employee who was promoted’

(34) a. * **ein junge Angestellte, der** befördert wurde
 b. **der junge Angestellte, der** befördert wurde
 c. * **der junger Angestellter, der** befördert wurde

Under Raising, however, (33) and (34a) contain a clash between the weak declension required by the definite internal determiner and the mixed declension required by the indefinite external determiner, see (35a) and (35b) respectively:

(35) a. **ein** [_{NP} *junger Angestellter*], [**der** *t_{NP}*] befördert wurde
 b. * **ein** [_{NP} *junge Angestellte*], [**der** *t_{NP}*] befördert wurde

2.3.3 Syntactic generalizations lost with Raising and/or Matching

As we have shown in the previous section, Raising and Matching, due to their commitment to treat relativizers as determiners (rather than pronouns), cannot cope with a number of MORPHOLEXICAL generalizations in both German and English.

In the current section, we will show in a parallel fashion that there is a whole range of SYNTACTIC generalizations that Raising and/or Matching miss. Many of these facts have been at the heart of Generative Grammar ever since its inception and fall under the empirically well-investigated rubric of island constraints. To be exact, Raising and/or Matching miss the following seven robust syntactic generalizations:¹⁶

1. In English, external arguments are extraction islands.^R
2. In German, no part of a genitive specifier of a DP can be extracted.^R
3. In German, no part of a dative specifier of a DP can be extracted.^R
4. In English, non-pronominal specifiers of a DP are marked with 's.
5. In German, the DP complement of an adjunct PP is an extraction island.^R
6. In German, *mit*-class adpositions are prepositional with an inanimate phrasal complement and postpositional with an inanimate pronominal complement.
7. In German, restrictive and non-restrictive RCs are typically identical in form.

Just as with the morphological generalizations, Raising violates every single one of these constraints. Matching fares better but still misses generalizations 4, 6, and 7.

¹⁶Once again, a generalization followed by a superscript *R* is only violated by Raising.

2.3.3.1 The Subject Condition

As is well-known, external arguments are extraction islands in English (see Chomsky 1973, Huang 1982):

(36) * [_{DP} *Who(m)*] did [_{SUBJ} pictures of *t*_{DP}] give Mary a headache?

In (36), the interrogative pronoun *who* is moved out of the subject. This movement step violates the Subject Condition and, as a result, leads to the ungrammaticality of the sentence. In the Raising Analysis of RCs, however, extraction from the subject of an RC must be able to result in perfectly grammatical DPs like the one in (37):

(37) the [_{NP} *person*] [_{SUBJ} *who t*_{NP}] gave Mary a headache

Here, the head NP *person* moves out of the subject, even though this step represents a clear violation of the Subject Condition. It is not obvious how the contrast between this violation and the grammaticality of the DP in (37) could be explained without recourse to ad hoc stipulations exempting the subjects of RCs from the Subject Condition. Thus, the Raising Analysis leads to the loss of a robust empirical generalization of English syntax.

2.3.3.2 The Left Branch Condition – part 1

Let us now turn to the Left Branch Condition (LBC). The following is a modernized version of Ross (1967: 207)'s original definition:

(38) Left Branch Condition

No DP (or any of its parts) that is the leftmost constituent of a larger DP can be reordered out of this DP by a transformational rule.

While it is known that some languages allow for left branch extraction, German respects the LBC: In German, no part of a genitive specifier of a DP can be extracted:

- (39) * *Wessen_{wh} hat [DP t_{wh} Tochter] das Pulver erfunden?*
whose has daughter the gunpowder invented
 ‘Whose daughter invented gunpowder?’

In (39), the extraction of *wessen* from the DP *wessen Tochter* incurs a violation of the LBC, which consequently leads to the ungrammaticality of the sentence. Now compare (39) to the Raising derivation in (40).

- (40) *der [NP Mann] [DP dessen^{gen} t_{NP} Tochter] das Pulver erfand*
the man whose daughter the gunpowder invented
 ‘the man whose daughter invented gunpowder’

The analysis in (40) is a case of sub-extraction where part of the genitive specifier, namely the head NP *Mann*, is subject to movement, thereby violating the LBC (see also Bhatt 2002:76). Yet, *der Mann, dessen Tochter das Pulver erfand* is perfectly grammatical. This loss of an otherwise well-respected generalization of German is an unwelcome consequence of the Raising Analysis of RCs.

2.3.3.3 The Left Branch Condition – part 2

In German, no part of a dative specifier of a DP can be extracted:

- (41) * *Wem_{wh} hat [DP t_{wh} seine Tochter] das Pulver erfunden?*
who has his daughter the gunpowder invented
 ‘Whose daughter invented gunpowder?’

In (41), *wem* is moved out of the DP *wem seine Tochter*, which yields a straightforward LBC-violation and rules (41) out as ungrammatical. In the Raising Analysis in (42), *Mann* is moved out of the DP *dem Mann seine Tochter*, thereby incurring the same kind of LBC-violation. Yet the DP in (42) is grammatical in certain varieties of German.

- (42) der [NP *Mann*] [DP *dem*^{dat} t_{NP} seine Tochter] das Pulver erfand
the man who his daughter the gunpowder invented
 ‘the man whose daughter invented gunpowder’

Again, Raising leads to the loss of an otherwise exceptionless generalization.

2.3.3.4 The mysterious disappearance of the possessive 's

We now turn to an argument due to Alexander Grosu (p.c.). In English, non-pronominal DP specifiers like *the woman* in (43) are marked with the possessive 's:

- (43) [DP [DP the woman's] car] was stolen

Building on this generalization and the fact that Raising and Matching have an internal head and analyze relativizers as determiners, (44b) and (44c) should be plausible Raising/Matching derivations for the genitive RC in (44a).

- (44) a. the woman whose car was stolen
 b. * the [NP *woman*] [DP [DP whose t_{NP}'s/[NP ~~woman~~]'s] car] was stolen
 c. * the [NP *woman's*] [DP [DP whose t_{NP}/[NP ~~woman's~~]] car] was stolen

While the head NP *woman* is severed from the possessive marker 's in (44b), the two remain adjacent to one another in (44c). Whichever way you go, though, the result is ungrammatical. It seems that the 's has to inexplicably disappear from the structure during the course of the derivation in order for Raising and/or Matching to yield (44a).

2.3.3.5 The Condition on Extraction Domains

In German, the DP complement of an adjunct PP is an extraction island. This is an immediate corollary of Huang (1982: 505)'s Condition on Extraction Domains, see (45):

- (45) Condition on Extraction Domains (CED)

A phrase A may be extracted out of a domain B only if B is properly governed.

Here, we understand the CED as a descriptive generalization, not in terms of its technical implementation. As is well-known, the concept of (proper) government has long been superseded in Minimalism. Yet there remains an empirical difference between domains that allow for extraction and those that do not. A prototypical example of the latter are adjuncts. Consider the following minimal pair:

(46) * [DP *Welchem Tag*] hatte Petra [PP *an t_{DP}*] Urlaub?
 which day had Petra on vacation
 ‘Which day did Petra take off?’

(47) *der [NP Tag], [PP an dem t_{NP}] Petra t_{PP} Urlaub hatte*
 the day on which Petra vacation had
 ‘the day that Petra took off’

In (46), *welchem Tag* has been extracted from a temporal PP adjunct, which is a straightforward CED violation. Consequently, the sentence becomes ungrammatical. Next consider (47), an adverbial RC pied-piping the temporal preposition *an*: Under the Raising Analysis, the PP is moved into the left periphery of the RC. Subsequently, the head NP *Tag* is extracted from the adjunct PP, a clear violation of the CED. Hence, (47) should be banned, yet it is grammatical. Again there is an incompatibility between the facts and the predictions of the Raising Analysis, the adoption of which results in the immediate loss of a uniform explanation for CED effects in German adverbial RCs.

The situation is even worse, however: If Huang’s CED is cross-linguistically valid, then the structural type *adverbial RC* should be universally unavailable. Even a cursory look at English reveals that this is not the case; (48) gives two grammatical examples of English adverbial RCs: locative and reason.

(48) a. the [NP *place*] [RC [AdvP *where t_{NP}*] I would like to be buried one day]
 b. the [NP *reason*] [RC [AdvP *why t_{NP}*] I can’t come]

In both cases, a Raising derivation is committed to moving the head *place/reason* out of an AdvP, which *qua* adjunct fails to satisfy the CED. Both examples, however, are grammatical. The situation is virtually identical in German. Compare the two adverbial RCs of English in (48) with their German equivalents in (49) and (50):

- (49) der [_{NP} *Ort*] [_{RC} [_{AdvP} *wo* *t*_{NP}] *ich mal* *begraben werden möchte*]
the place where I sometime buried be want
 ‘the place where I want to be buried one day’
- (50) der [_{NP} *Grund*] [_{RC} [_{AdvP} *warum* *t*_{NP}] *ich nicht kommen kann*]
the reason why I not come can
 ‘the reason why I will not be able to come’

2.3.3.6 The syntax of adpositions

German *mit*-class adpositions are prepositional when combined with an inanimate phrasal complement and postpositional when the inanimate complement is pronominal:

- (51) Wir hatten [_{PP} *mit dem Anruf* (**mit*)] gerechnet.
we had with the call (with) expected
 ‘We had expected the phone call.’
- (52) Wir hatten [_{PP} (**mit*) *da mit*] gerechnet.
we had (with) it with expected
 ‘We had expected the phone call.’

In (51), *mit* takes the inanimate DP *dem Anruf* as its complement. In this case, *mit* must obligatorily precede its complement; the use of *mit* as a postposition results in ungrammaticality. This establishes the first half of the above generalization. Next, we combine *mit* with the inanimate R-pronoun *da* as its complement. In this case, as (52) shows, *mit* may only be used as a postposition, not as a preposition. This establishes the second half of the generalization. Interrogative clauses respect this generalization:

- (53) [PP (*mit) Wo mit] hattet ihr nicht gerechnet?
 (with) what with had you not expected
 ‘What did you not expect?’

The fronted PP in (53) contains the inanimate R-pronoun *wo*. In accordance with the above generalization, only a postpositional use of *mit* yields a grammatical interrogative clause. Now consider the case of alleged Raising in (54):

- (54) etwas [NP Schreckliches], [PP (*mit) [wo t_{NP}] mit] man nicht rechnet
 something terrible (with) what with one does-not expect
 ‘something terrible that one does not expect to happen’

Note that the RC-head *Schreckliches* is inanimate. Hence both Raising and Matching assume that, in its base position, *mit* combines with an inanimate phrasal complement (the DP headed by *wo*). The above generalization, therefore, predicts *mit* in (54) to have its prepositional use only. But the opposite is true: Only the use of *mit* as a postposition makes the sentence grammatical.

So, if the above generalization is valid, then this provides strong evidence for the claim that *wo* in (54) has the status of a pronoun, not that of a determiner. This is irreconcilable with the assumption (common to Raising and Matching) that relativizers, in general, are to be treated as determiners rather than pronouns.

2.3.3.7 Formal identity of restrictive and non-restrictive relative clauses

In German, restrictive and non-restrictive RCs are typically identical in form. Consider the following DP:

- (55) das Bild, das im Wohnzimmer hängt
 the picture which in the living room hangs
 ‘the picture(,) which is hanging in the living room’

The RC in (55) is ambiguous between a restrictive and a non-restrictive reading. One would expect this uniformity to be reflected in a generative analysis of German RCs, as Generative Grammar was developed for the very purpose of capturing this kind of generalization. However, Raising and Matching have largely been limited to restrictive RCs.

Kayne (1994) claimed that appositives show reconstruction effects and, consequently, proposed to extend the Raising analysis to cover appositives as well. Bianchi (1999: chapters 4 and 5) questioned the validity of these reconstruction effects and put forth a non-Raising analysis for appositives, as did de Vries (2002: chapter 6). Assigning those two types of RC different derivations misses a generalization. Yet, general conditions of economy suggest that, *ceteris paribus*, this formal identity should be captured by giving (at the level of form) a unitary analysis to restrictive as well as appositive RCs.

2.3.3.8 Conclusion

In the balance, the adoption of the Raising and Matching theories of RCs leads to a systematic loss of empirical generalizations about English and German. What is particularly damning is that these missed generalizations are not of a theory-internal nature, but represent robust empirical generalizations in syntax and morphology that have been the subject of formal grammar for decades. This is particularly true of the island constraints. In our view, this disqualifies both Raising and Matching from further consideration.

This leaves us with the problem that these theories have a measure of success in accounting for reconstruction phenomena, even though, as we have shown above, neither theory is perfect on this front either. Clearly, though, if we discard Raising and Matching, as the systematic counterevidence provided above suggests we should, we

will have to find different solutions for the apparent reconstruction effects in RCs involving idioms and bound elements. In the remainder of the paper, we will tackle the first issue and show that the behavior of idioms in RCs can be captured without postulating an RC-internal occurrence of the head at any point of the derivation.

2.4 Idioms within and outside of relative clauses

Idioms do not form a homogeneous class. There seem to be at least two different subclasses:¹⁷

- syntactically frozen idioms
- syntactically flexible idioms

We will structure this section accordingly: Subsection 2.4.1 deals with syntactically frozen idioms, Subsection 2.4.2 with syntactically flexible idioms. The parts of syntactically flexible idioms can be separated by an RC and other clause boundaries. Such idioms have been used to argue for the Raising Analysis of RCs.

In light of the above-mentioned arguments against the Raising Analysis, we are in need of an account that avoids raising the head NP out of the RC in the course of the syntactic derivation. We will work out the guiding ideas of such an account.

¹⁷See, for example, Nunberg et al. (1994) or Sailer (2003). Initially, following Horn (2003) and the judgments in the literature, we thought that there were at least three idiom classes, with *pull strings* and *spill the beans* being in different classes. Having looked into the data situation ourselves, however, including corpus searches and feedback from native speakers, there was no indication of having two separate idiom classes on the basis of a difference between *pull strings* and *spill the beans*. We thank an anonymous reviewer for reinforcing this point even further. Please note in this context that *spill the beans* should actually rather be cited as *spill beans*, as the definite determiner is not an obligatory part of the idiom. Neither is the plural of the idiomatic noun, by the way. This also holds for the idiomatic noun in *pull strings*. Both nouns can also occur in their singular form, as for instance in *pull a string or two* or *spill bean after bean*. See Chapter 6 of this dissertation for details.

2.4.1 Syntactically frozen idioms

The following are typical examples of syntactically frozen idioms:¹⁸

- *kick the bucket* (\approx ‘die’)
- *saw logs* (\approx ‘snore’)
- *shoot the breeze* (\approx ‘chit-chat’)

We will take *kick the bucket* as our standard example here.

2.4.1.1 Data

The syntactic behavior of *kick the bucket* is very straightforward: The idiom always occurs contiguously; a form of the verb *kick* directly precedes the noun phrase *the bucket*.¹⁹ As this condition is met under embedding under an auxiliary, VP-preposing, and VP-clefting, the idiomatic VP (VP_{id}) can occur in each of these constructions, as illustrated below:²⁰

- (56) a. He might [VP_{id} *kick the bucket*].
 b. ... and [VP_{id} *kick the bucket*] he did.
 c. It was [VP_{id} *kick the bucket*] that he did last week.

The difference between verbal and nominal gerunds in (57), which was pointed out by Fraser (1970: 32), falls out from the stated generalization as well, as the syntactic pieces of the idiom are contiguous in the verbal gerund, whereas they are illicitly interrupted by *of* in the nominal gerund.

- (57) a. Your friend’s [VP_{id} *kicking the bucket*] caused great concern.
 b. * Your friend’s *kicking of the bucket* caused great concern.

¹⁸See Fraser (1970: 32), Wasow et al. (1980: 89), and Nunberg et al. (1994: 497), respectively.

¹⁹We ignore cases of external modification, in which a domain-delimiting adjective inserted in-between *the* and *bucket* semantically modifies the idiom as a whole, see Ernst (1981).

²⁰The examples are due to Dianne Jonas.

Finally, the idiom is incompatible with all constructions in which its nominal part would appear to the left of its verbal part. Thus, passivization is impossible:²¹

(58) * *The bucket was kicked.*

The same holds for DP-preposing, DP-clefting, RCs, and *wh*-movement:²²

- (59) a. * *The bucket Pete kicked.*
 b. * *It was the bucket that Pete kicked.*
 c. * *The bucket John kicked was astonishing.*
 d. * *Which bucket did John kick?*

2.4.1.2 Analysis

A construction-based analysis of syntactically frozen idioms is rather simple. Besides a lexicon for words, a construction-based grammar also provides a lexicon for phrases. A syntactically frozen idiom is listed in this phrasal lexicon as a single, contiguous, and mostly fixed syntactic tree structure, which, as a whole, is assigned the idiomatic meaning, whereas the subconstituents of the phrasal lexical entry are meaningless. In the case of *kick the bucket*, we are looking at the structure of a standard VP and the idiomatic meaning *die*':²³

- (60) The phrasal lexical entry of idiomatic *kick the bucket*:²⁴
 SYN: [_{VP} [_V kick-] [_{DP} the bucket]]
 SEM: *die*'

The constraints in (60) must be met at the single syntactic representation level that our grammar licenses for a given string: its surface representation or spell-out. The gram-

²¹See Bargmann & Sailer (2018), though.

²²From Schenk (1995: 254).

²³There is another option: Lichte & Kallmeyer (2016), Bargmann & Sailer (2018), and Kay et al. (ms) analyze *kick the bucket* in terms of individual word entries.

²⁴The hyphen in the SYN-value allows for verbal inflection.

maticity pattern of *kick the bucket* in (56)-(59) follows straightforwardly from these simple assumptions.

The point that phrasal lexical entries are *surface* lexical entries is worth elaborating, as it reveals an important gap in the idiom argument for the Raising Analysis of RCs: Idioms differ from one another with regard to the surface configurations they allow. Therefore, idiom licensing at the point of merge is at best incomplete, because by itself it makes no predictions about the observable surface forms that can be derived from the merged structures. This issue is highlighted by the existence of idioms restricted to occurring in non-canonical sentence forms. The following examples are from Wasow et al. (1980: 89) and Nunberg et al. (1994: 516):

- (61) a. *Passive*: fit to be tied
 b. *Tough-movement*: hard to take, play hard to get
 c. *Imperative*: Break a leg!
 d. *Yes-no question*: Is the Pope catholic?

For the topic of the present article, an idiom like *kill the goose that lays the golden egg* is particularly noteworthy, as it obligatorily contains an RC, highlighting again that an adequate theory of idioms needs to encompass a theory of surface forms that allow idiomatic interpretations, not merely a theory of how the pieces of idioms must be merged.²⁵

Like word entries, phrasal entries are permitted to show different degrees of specificity. The classical *What's X doing Y* construction analyzed in Kay & Fillmore (1999), for instance, requires the presence of a sentence-initial expression *what's*, a lexically

²⁵The treatment of idioms at the point of merge is problematic in other respects as well. Radford (2009: 242), for instance, still maintains the claim that “only a string of words which forms a unitary constituent can be an idiom” and hence concludes (as originally claimed in Marantz 1984) that “we don't find idioms of the form subject+verb where the verb has a complement which isn't part of the idiom.” Idioms like *What's eating X*, *The bottom fell out of X*, and *A little birdy told X that Y* clearly falsify this claim.

flexible subject, the progressive main verb form *doing*, and a lexically flexible predicate:

- (62) a. *What's Jill doing sleeping?*
 b. *What's that fly doing in my soup?*

One limiting case of such listed phrases consists of those entries that do not make reference to specific words but merely specify grammatical (and semantic) configurations. Examples of this are the classical X-bar configurations, e.g. the phrase that combines a head with its complements or the phrase that combines a (lexical or phrasal) head and its subject. Complete sentences are not built up with the use of merge in this theory but as the spelling out of parts of constructions by other phrasal constructions and/or words. Thus, in addition to realizing the flexible subject slot as the proper name *Jill* in (62a) above, other instantiations of the DP-construction are possible realizations of the subject in the *What's X doing Y* construction as well, as is illustrated below:

- (63) a. *What's [DP she] doing sleeping?*
 b. *What's [DP the cat] doing sleeping?*
 c. *What's [DP my cat] doing sleeping?*
 d. *What's [DP my neighbor's cat] doing sleeping?*
 e. ...

2.4.2 Syntactically flexible idioms

Let us start off with two examples:

- (64) a. *spill beans* ('divulge secrets')
 b. *pull strings* ('use connections')

We will use *pull strings* to exemplify the behavior of syntactically flexible idioms.

2.4.2.1 Data

The idiom *pull strings* may, of course, form a surface VP, as in the canonical sentence in (65).

- (65) Kim's family *pulled strings* on her behalf.
(based on example (10c) in Nunberg et al. 1994: 502)

However, it may also occur non-contiguously – for instance in the passive voice:

- (66) *Strings* seem to be *pulled* every time he applies for a promotion. (Horn 2003: 261)

The example in (66) also shows that the nominal part of the idiom can undergo raising into the subject position of a raising verb like *seem*. Moreover, *pull strings* permits its nominal part to undergo A'-movement, which (67) demonstrates for preposing and (68) for *wh*-movement.

- (67) Those *strings*, he wouldn't *pull* for you. (Gazdar et al. 1985: 238)
(68) How many *strings* did he *pull* to get the promotion? (Horn 2003: 261)

There are at least two more surface variants of the idiom that need to be captured. First, the verbal part of the idiom can undergo VP-ellipsis:

- (69) I was worried that *strings* might be *pulled*, but *they* weren't _____.

In (69), the elided passive participle after *weren't* in the second conjunct is anaphoric to *pulled* in the first conjunct. And second, the nominal part does not have to be realized by the surface phrase *strings* but can be pronominalized. The following examples illustrate this even more clearly:

- (70) a. Kim's family *pulled* some *strings* on her behalf, but *they* weren't enough to get her the job. (Nunberg et al. 1994: 502)
- b. I would not want you to think that we are proud of our ability to *pull strings*, such as *the ones* we *pulled* to get you down here. (Nunberg et al. 1994: 502)
- c. We need to *pull* some *strings* to get Mary the job and we need to *pull them* fast. (Dianne Jonas, p.c.)

Being discourse-anaphoric processes, ellipsis and pronominalization rely on the meaning, not the form, of the expressions they apply to. Consequently, idiomatic *pull* and idiomatic *strings* must both have a meaning (see Nunberg et al. 1994). The example in (70a) is noteworthy because in the second conjunct the anaphoric continuation *they* of *some strings* occurs as the argument of a verb other than *pull*. This shows that the nominal part of the idiom not only carries a meaning, but that this meaning is compatible with predicates differing in both form and meaning from idiomatic *pull*. The theoretical relevance of this observation was pointed out by Wasow et al. (1980: 94).

Let us now look at the behavior of this idiom class in RCs. Structures comparable to the one in (71) have typically been cited as motivation for the Raising Analysis of RCs:²⁶

- (71) We were surprised at [_{DP} the *strings* [_{RC} that were *pulled*]] to get Joe's promotion. (Horn 2003: 261)

The argument goes as follows: Idioms are licensed at the point of merge. Hence, *strings* must be merged into the complement position of *pulled* inside the RC of (71) and then raised into its surface position, where it serves as the head of the RC.

This argument gets repeated in the literature to this day, even though, in its simplest form, it was already refuted by McCawley in the early eighties with the example

²⁶See our earlier discussion of *make headway* and *pull strings* in Section 2.3.1.1.

in (15) and later by van Riemsdijk with the example in (13), both repeated here for convenience:

(72) Parky *pulled* the [_{NP} *strings*] [_{RC} that *t*_{NP} got me the job].

(73) John never *pulled* the [_{NP} *strings*] [_{RC} that his mother told him should be *pulled* *t*_{NP}].

Under the Raising Analysis, *strings* would appear inside the RC at the point of merge in both cases. This robs the verb *pulled* in the main clause of its idiomatic licensing context and should make both sentences ungrammatical in the idiomatic reading, contrary to fact. The grammaticality of McCawley's sentence in (72) is particularly unexpected, since *strings* would be merged into an argument position of *got* in the RC, which does not contain *pull* at all. Any theory of *pull strings* will have to handle similar "argument to the wrong verb" sentences from the literature:

(74) a. Pat *pulled strings* that Chris had no access to. (Wasow et al. 1980: 93)

b. The *strings* that Pat *pulled* helped Chris get the job. (Wasow et al. 1980: 93)

And it gets even worse. The final two examples in (70) showed that *pull* can occur in its idiomatic meaning without being syntactically linked to *strings*. Wasow et al. (1980: 93f) provide the following discourse to show that the reverse is true as well, i.e. *strings* can occur in its idiomatic meaning without being syntactically linked to *pull*:

(75) Pat and Chris graduated from law school together with roughly equal records. Pat's uncle is a state senator, and he *pulled strings* to get Pat a clerkship with a state supreme court justice. Chris, in contrast, didn't have access to any *strings*, and ended up hanging out a shingle.

Here is a similar example of *make headway*:²⁷

- (76) We have two to three weeks left before we move to Utah and only this week have we *made* any *headway* on the things that we have to get done before then. Though our *headway* was late it was however every (sic!) effective.

Wasow et al. (1980) claim that (75) is grammatical because idiomatic *strings* can occur without *pull* in a discourse where the whole idiom has already been introduced. We will incorporate this idea into our analysis of *pull strings*, to which we now turn (albeit in a different fashion from Wasow et al. 1980, who offer a processing account).

2.4.2.2 Analysis

The analysis of syntactically flexible idioms is more involved than the analysis of syntactically frozen idioms because there is no (obvious) way to analyze a syntactically flexible idiom as a single and contiguous phrase-level lexical entry. In a syntactically flexible VP-idiom, the internal argument of the verb is not restricted to the latter's object function, so that the relationship between the two constituents of the idiom cannot be hardwired as that of head and complement in a listed VP.

In view of its syntactic flexibility and the fact that *pull* can occur without *strings* being in the same sentence and vice versa, we will follow Wasow et al. (1980) and take *pull strings* to be composed of two separate lexical entries: the idiomatic verb *pull* and the idiomatic plural noun *strings*:²⁸

²⁷From <http://www.jacobboyle.com/eventide/?p=192>.

²⁸As already mentioned towards the end of footnote 17, it is a simplification that the second word-level lexical entry of the idiom *pull strings* consists of the idiomatic plural noun *strings*.

(77) Lexical entry of idiomatic *pull*:

SYN: [V pull-]

SEM: $pull_{id}'$

Co-occurrence constraint: Idiomatic *pull* is licensed iff (after a discourse update) the variable in the second argument position of its SEM-value $pull_{id}'$ is predicated over by the SEM-value of idiomatic *strings*, i.e. $strings_{id}'$.

(78) Lexical entry of idiomatic *strings*:

SYN: [N strings]

SEM: $strings_{id}'$

Co-occurrence constraint: Idiomatic *strings* is licensed iff

(i) its SEM-value $strings_{id}'$ predicates over the variable in the second argument position of the SEM-value of idiomatic *pull*, i.e. $pull_{id}'$ or

(ii) $strings_{id}'$ is already present and salient in the discourse.

Neither of these two lexical entries refers to the syntax (SYN) of the other, and they combine according to standard syntactic rules. However, both entries contain a specific co-occurrence constraint on the semantic representation (SEM) of the linguistic context containing them, where each entry can be identified on the basis of its unique SEM-value, which basically functions like a genetic code or fingerprint.

The two co-occurrence constraints – which, except for the additional licensing option for *strings* in (ii), include essentially the same licensing condition formulated from two different perspectives – ensure that neither of the two idiom parts can occur without the other one being in the discourse as well: Any occurrence of *pull* requires an instance of the semantic representation of *strings*, and any occurrence of *strings* requires an instance of the semantic representation of *pull*, both of which, we assume, can eventually only be introduced into the overall semantic representation by the lexical entries in (77) and (78).

Specifically, it follows from the co-occurrence constraint in (77) that idiomatic *pull* must occur in the context of idiomatic *strings*, because the second argument of *pull*'s

SEM-value $pull_{id}'$ must be predicated over by the SEM-value $strings_{id}'$, which can only be introduced into the overall semantic representation by idiomatic $strings$. The proviso “after a discourse update” allows for the cross-sentential anaphora in (70): $pull$ need not be syntactically linked to $strings$, but it must be syntactically linked to an anaphoric element whose meaning is determined by $strings$.

Conversely, it follows from the co-occurrence constraint in (78) that idiomatic $strings$ must occur in a linguistic context containing idiomatic $pull$. This is the case since the SEM-value of $strings$ (i.e. $strings_{id}'$) must either (i) predicate over the second argument of $pull_{id}'$, which we assume can ultimately only be contributed by idiomatic $pull$, or (ii) occur in a linguistic context where $strings_{id}'$ is already present and salient. In the latter case, the latest occurrence of $strings_{id}'$ can predicate over the semantic argument of predicates other than $pull_{id}'$, allowing for examples such as (72), (74), and (75). However, $strings_{id}'$ must have been entered into the discourse by some prior occurrence of $strings$, and in the semantic representation of the discourse including that prior occurrence of $strings$, $strings_{id}'$ must predicate over the idiomatic argument of $pull_{id}'$, which can only be contributed by some occurrence of $pull$. Consequently, each occurrence of $strings$ is required to occur in a discourse that contains at least one occurrence of $pull$.

Let us now go through the $pull strings$ examples from Section 2.4.2.1 and illustrate how they are licensed on the basis of the co-occurrence constraints in the lexical entries in (77) and (78). We will start off with a shortened version of the (canonical) example in (65), see (79a), for which a semantic representation would roughly look like (79b).²⁹

- (79) a. Kim’s family *pulled strings*.
 b. $\exists x[strings_{id}'(x)](pull_{id}'(kim's-family', x))$

²⁹For the purposes of exposition, we will use some form of predicate logic and ignore tense information, but readers should feel free to use their favorite semantic representation language and include more details.

Since both idiomatic *pull* and idiomatic *strings* occur in (79a), their respective co-occurrence constraint must be fulfilled for them to be licensed. This is the case. The constraint on *pull* is fulfilled because the variable in the second argument position of $pull_{id}'$ (here x) is predicated over by $strings_{id}'$, and the constraint on *strings* is fulfilled because $strings_{id}'$ predicates over the variable in the second argument position of $pull_{id}'$ (x again).

The same holds for the passive and raising sentence in (66), see (80a) and (80b) for a shortened version of (66) and its semantic representation.

- (80) a. *Strings* seem to be *pulled*.
 b. $Seem'(\exists x[strings_{id}'(x)](\exists y.pull_{id}'(y,x)))$

As in (79a), both *pull* and *strings* are present, so both constraints have to be fulfilled. And as in (79a), this is the case.

The preposing and *wh*-movement examples in (67) and (68), repeated below as (81a) and (81b),

- (81) a. Those *strings*, he wouldn't *pull* for you.
 b. How many *strings* did he *pull* to get the promotion?

are well-formed since in both cases the moved constituent containing idiomatic *strings* (*those strings* in (81a) and *how many strings* in (81b)) is interpreted as the internal argument of idiomatic *pull*, so that the relevant parts of the semantic representations of (81a) and (81b) look like they did in (79b).

In the example in (69), repeated below as (82), we observed two anaphoric relations: The pronoun *they* is anaphoric to idiomatic *strings* and the elided passive participle after *weren't* to idiomatic *pulled*.

- (82) I was worried that *strings* might be *pulled*, but *they* weren't ...

All that is necessary for the second conjunct to be well-formed is for the pronoun and the ellipsis site to be licensed by the idiomatic meaning of *strings* and *pull* in the first conjunct. This is the case, because the relevant parts of the semantic representation of the first conjunct look just like in (80b).

With (70), repeated below as (83), we gave more examples for the pronominalizability of *strings* and demonstrated with (70a), repeated below as (83a), that an anaphoric continuation of *some strings* (here the pronoun *they*) can occur as the argument of a verb other than *pull*.

- (83) a. Kim's family *pulled* some *strings* on her behalf, but *they* weren't enough to get her the job.
- b. I would not want you to think that we are proud of our ability to *pull strings*, such as *the ones* we *pulled* to get you down here.
- c. We need to *pull* some *strings* to get Mary the job and we need to *pull them* fast.

The first parts of these sentences are all unproblematic, because idiomatic *pull* and idiomatic *strings* co-occur locally, as in (79a). So let us focus on the second parts.

In (83a), the second conjunct contains neither idiomatic *pull* nor idiomatic *strings*, as it was the case in (82). In consequence, neither of the constraints in (77)-(78) applies. The pronoun *they* adopts the idiomatic meaning of idiomatic *strings* in the first conjunct, and the meaning of *strings* is compatible with the meaning of the VP *weren't enough to get her the job*.

In (83b), the *such*-phrase only contains *pull* but not *strings*, hence only the constraint on idiomatic *pull* needs to be fulfilled, which it is since the anaphoric expression *the ones* is licensed by the idiomatic meaning of *strings* in the first conjunct, just as the pronoun *they* in (83a). We will get to the details of how *the ones* and *pulled* interact when we turn to the analysis of the RCs in (71)-(74) in just a moment.

In (83c), the second conjunct again only contains *pull* but not *strings*, so that, again, only the constraint on idiomatic *pull* needs to be fulfilled, which it is: The variable in the second argument position of $pull_{id}'$ is predicated over by $strings_{id}'$ since the pronoun *them* is co-indexed with the DP *some strings* in the first conjunct and, therefore, obtains the meaning of idiomatic *strings*.

Wasow et al. (1980)'s example (75), whose relevant parts are repeated below as (84), contains an occurrence of *strings* that is not syntactically linked to *pull*. This is possible since the latest occurrence of *strings* is licensed by the previous occurrence of *strings* (see clause (ii) of the co-occurrence constraint of *strings*), which, in turn, is locally licensed by *pull* (see clause (i) of the co-occurrence constraint of *strings*).

(84) Pat's uncle *pulled strings* to get Pat a clerkship. Chris, in contrast, didn't have access to any *strings*.

Let us now finally come the sentences in (71)-(74), repeated below in a different order as (85a)-(89a). What these sentences have in common is that each of them contains an RC whose head is idiomatic *strings*. They differ, however, with respect to whether idiomatic *pull* is part of the RC, as in (85a) and (86a), or the host clause, as in (87a) and (88a), or both, as in (89a). These differences are directly mirrored in the semantic representations in (85b)-(89b), which include only those (= underlined) parts of the sentences that are relevant for licensing *pull strings*.

In (85b) and (86b), the quantifier restricted by $strings_{id}'$ binds the variable in the second argument position of $pull_{id}'$ within its restrictor (delineated by the square brackets). In (87b) and (88b), the quantifier restricted by $strings_{id}'$ binds the variable in the second argument position of $pull_{id}'$ within its scope. And in (89b), the quantifier restricted by $strings_{id}'$ binds the variable in the second argument position of $pull_{id}'$ within both its restrictor and its scope.

- (85) a. We were surprised at the strings that were pulled to get Joe's promotion.
 b. $thex[strings_{id'}(x) \ \& \ \exists y.pull_{id'}(y,x)]$
- (86) a. The strings that Pat pulled helped Chris get the job.
 b. $thex[strings_{id'}(x) \ \& \ pull_{id'}(pat',x)]$
- (87) a. Parky pulled the strings that got me the job.
 b. $thex[strings_{id'}(x)](pull_{id'}(parky',x))$
- (88) a. Pat pulled strings that Chris had no access to.
 b. $\exists x[strings_{id'}(x)](pull_{id'}(pat',x))$
- (89) a. John never pulled the strings that his mother told him should be pulled.
 b. $\neg\exists x[strings_{id'}(x) \ \& \ tell'(john's-mother', john', should'(\exists y.pull_{id'}(y,x)))]$
 $(pull_{id'}(john',x))$

As can easily be seen now, $strings_{id'}$ always predicates over the variable in the second argument position of $pull_{id'}$, so that the co-occurrence constraints in (77) and (78) are always fulfilled.

2.5 Conclusion

At the outset of the paper, we showed that the theoretical literature offers at least three different approaches to the analysis of restrictive RCs (Modification, Raising, Matching) and that it would be desirable to pare down the list of contenders. We went on to show that Raising and Matching both lead to the loss of linguistically significant generalizations. In the case of Raising, we take this loss to be so intolerable in terms of both amount and nature that we consider this to be one of those relatively rare cases where a linguistic theory must actually be viewed as refuted by the evidence. Matching avoids some of the problems of Raising, yet the problems that remain for Matching are sufficiently significant for us to want to go down a different avenue.

Of the original three contenders, this only leaves Modification in play. It is not affected by the disqualifying objections to Raising and Matching but faces serious problems of its own, apparently all involving reconstruction of one form or another. We presented data from idiom licensing and binding theory that have been argued to require Raising and/or Matching and illustrated that the solutions that Raising and/or Matching offer for these issues are not completely free of problems. We then set out to look for an analysis of the idiom data that is compatible with Modification.

Drawing on the previous literature, we illustrated that not all idioms behave alike. It appears that grammatical theory needs to capture at least two cases: syntactically frozen idioms and syntactically flexible idioms. We showed that it is insufficient to require the pieces of syntactically flexible idioms to be merged locally, since idioms differ from each other in the kinds of observable surface configurations they permit. In fact, as Nunberg et al. (1994) emphasize, some idioms can only appear in transformationally derived structures. We sketched analyses for the two classes of idioms and demonstrated that these analyses capture the empirical differences between them.

A syntactically frozen idiom like *kick the bucket* is analyzed as a single and contiguous entry in the phrasal lexicon, which explains why its pieces have to stay adjacent in phrase structure. A syntactically flexible idiom like *pull strings* consists of two separate parts in the word lexicon that are semantically linked. Under the right circumstances, this permits a degree of syntactic flexibility that allows the two pieces of the idiom to be separated by RC-boundaries or even main clause boundaries, as long as the meanings of the pieces are appropriately connected in the semantic representation of the discourse. We believe that all grammatical cases of idioms in RCs can be handled within our approach. As the theory we have sketched avoids representing the head of the RC inside the RC at any point of the syntactic derivation, it is compatible with Modification. Better yet, the combination of Modification with our treatment of idioms not only accounts

for the data that have traditionally been taken to motivate Raising and/or Matching, but it also captures examples that neither of the latter two theories can handle, in particular the “argument to the wrong verb” cases, and it does all of the above in a uniform fashion.

Chapter 3

How frozen are frozen idioms?

3.1 Introduction

When it comes to idioms, one of the most prominent examples in the linguistic literature is the English VP-idiom *kick the bucket* (\approx ‘die’), which also figures quite prominently in the present dissertation. The preceding chapter claimed that the syntactic behavior of this idiom is very straightforward, that it always occurs contiguously, that the verb *kick* always directly precedes the noun phrase *the bucket*, and that, as a consequence, the idiom is incompatible with any construction in which *the bucket* would appear to the left of *kick*, like passivization, DP-preposing, DP-clefting, RCs, or *wh*-movement. The conclusion of the preceding chapter is that *kick the bucket* is syntactically frozen and should be analyzed as a single and contiguous entry in the phrasal lexicon.

Similar claims can be found all over the literature: *kick the bucket* is considered to be syntactically and semantically monolithic, to be stored in the lexicon as a whole (either as a word or as a fixed phrase) and to be coupled with its meaning as a whole. That is why, so the argument goes, in contrast to semantically decomposable idioms like *pull strings* (\approx ‘use connections’), all the parts of *kick the bucket* must be given

in the exact same linear sequence, why any disruption of that sequence results in ungrammaticality, and why *kick the bucket* does not allow for any variations that would need its individual components to have meanings, like modification of or quantification over the meaning of its complement-NPs head noun *bucket*. On top of that non-decomposable idioms are also considered to be highly inflexible in terms of their lexical and morphological make-up.

The findings of this almost purely data-oriented chapter will cast some doubt on these positions. The structure of the chapter is as follows. Within Section 3.2.1, I will focus on the lexical flexibility of *kick the bucket*, in Section 3.2.2 on its morphological flexibility, in Section 3.2.3 on its syntactic flexibility, and in Section 3.2.4 on a variation of *kick the bucket* that, at least to the best of my knowledge, has not received any attention before: *X kicks Y's bucket*. Within Section 3.3, I discuss the implications of my findings for the analysis of *kick the bucket*.

3.2 New empirical observations on *kick the bucket*

In this section, I will present the standard claims that are made about *kick the bucket* in the literature and contrast the lexical, morphological, and syntactic restrictions that they express with my empirical findings.

3.2.1 The lexical flexibility of *kick the bucket*

The words within a fully-literal expression have the same meanings as outside of it. As a consequence, replacing words in a fully-literal expression results in a meaning change that directly corresponds to the differences in meaning between the original and the substituted words, so that substituting synonyms (words of the same syntac-

tic category and a very similar meaning) results in almost no meaning change at all, whereas substituting antonyms (words of the same syntactic category but quite different meanings) results in a much more substantial meaning change. If, for example, you replace the word *shed* in *build a shed* with the word *shack*, the meaning roughly stays the same, i.e. the meaning of *build a shack* is approximately the same as the meaning of *build a shed*. If, on the other hand, you replace the word *shed* in *build a shed* with the word *mansion* or *castle*, the meaning changes quite considerably.

The words within a fully-idiomatic idiom, in contrast, do not have the same meanings as outside of it, and they often cannot be freely replaced without causing the idiom to lose its idiomatic meaning. If, for example, you replace the word *breeze* in the idiom *shoot the breeze* with the word *wind* (one of the synonyms of *breeze* outside of the idiom), the idiomatic meaning ‘chat’ vanishes and all you have left is the literal meaning of *shoot the wind*. This indicates that the idiom *shoot the breeze* does not allow for that particular substitution. In this chapter, I will refer to the degree to which a fully-idiomatic idiom’s words can be replaced by other words without causing the idiom to lose its idiomatic meaning as the degree to which that idiom is lexically flexible. If a fully-idiomatic idiom does allow for one of its words to be replaced, it usually only allows very specific synonyms to be substituted for it.

Let us now focus on the lexical flexibility of *kick the bucket*, more specifically, the standard claim in the literature that *kick the bucket* shows no lexical flexibility whatsoever, which would mean that none of the words can be exchanged without causing *kick the bucket* to lose its idiomatic meaning. If you only look at data like those in (1), which already contain more variants than are usually considered, you can easily get the impression that the standard claim is correct.¹

¹A # signifies that the respective string lacks the idiomatic interpretation.

- (1) a. # Kim *kicked the* {pail, pot, bin}.
- b. # Kim {booted, punted} *the bucket*.
- c. # Kim *kicked* {a, one, that, every, another, \emptyset } *bucket*.

Neither the noun *bucket* nor the verb *kick* nor the determiner *the* of *kick the bucket* can be replaced as in (1) without losing the idiomatic meaning. What about data like those in (2), though?²

- (2) a. I'll be a kid at heart as far as the Christmas holidays go until the day I *kick my bucket*.³
- b. When I *kick my bucket*, I want to create such a brilliant mess that those who follow can't help but be inspired, maybe even educated. Or at least entertained.⁴
- c. Amazing! I have fallen in love with this place. Nothing can be better than this. Added to my places to be visited before I *kick my bucket*.⁵
- d. I hope that I get to see many more movies as enjoyable as The Bucket List before I *kick my bucket* and head for that great multiplex in the sky.⁶
- e. Have you ever dreamt of a place that you would want to go to before you *kick your bucket*?⁷
- f. Don't be brainwashed that Govt would take care of you until you *kicked your bucket*. You take care of yourself until you die.⁸
- g. The whole idea is to just enjoy life by seeing God till some day you *kick your bucket*.⁹

²For ease of reference, the idioms and their varied parts are italicized within the examples. The date in round brackets behind Internet sources designates the last time that source was accessed.

³<http://silverscreenoasis.com/oasis3/viewtopic.php?t=6070> (11 Nov 2017)

⁴<http://www.almostunsalvageable.com/what-is-a-professional-bucket-lister> (11 Nov 2017)

⁵<https://www.bcmtouring.com/forums/threads/in-search-of-the-haunted-bungalow-at-bonacaud-trivandrum-kerala.46807/page-5> (11 Nov 2017)

⁶https://www.rottentomatoes.com/m/bucket_list/reviews/?page=3&sort=fresh (11 Nov 2017)

⁷<http://divya-kodati.blogspot.de/2013/05/color-color.html> (11 Nov 2017)

⁸<https://www.sammyboy.com/threads/give-me-10-good-reasons-to-get-rid-of-pap.176505/page-3> (11 Nov 2017)

⁹<http://madthinker.blogspot.de/2007/03/is-god-abstraction-or-reality.html> (11 Nov 2017)

- h. The plants are doing fine except one cucumber sapling which *kicked its bucket*.¹⁰
- i. Hi guys – it’s a sad day in the Yelding household as our faithful scanner finally *kicked its bucket* :-(¹¹
- j. After four years, my poor Samsung has officially *kicked its bucket*, so my mother and I took a trip to Best Buy while she was here this weekend to get a new one.¹²
- k. Many would think that this view has *kicked its bucket* and is now safely collecting dust on the shelf marked “Myths and Legend”.¹³
- l. In case you never realised, she *kicked no bucket*. She placed 3rd and is getting international attention ...¹⁴

In all of the examples in (2), the definite determiner *the* has been replaced by some other determiner expressing definiteness: in (2a)-(2d) by the first-person-singular possessive determiner *my*, in (2e)-(2g) by the second-person-singular possessive determiner *your*, and in (2h)-(2k) by the third-person-singular possessive determiner *its*. However, in none of these cases does the replacement cause the idiomatic meaning to vanish. All of the examples in (2) have the idiomatic reading. In fact, for (2h)-(2k), the idiomatic reading is the only reading available, as neither saplings nor electronic devices nor views can literally kick anything.

¹⁰<https://www.ryze.com/posttopic.php?topicid=1018292&confid=660> (11 Nov 2017)

¹¹<https://enchantedi violin.deviantart.com/journal/?offset=1> (11 Nov 2017)

¹²<https://next-to-normal.dreamwidth.org/tag/how+cute+is+my+kitty> (11 Nov 2017)

¹³<http://unveiling-christianity.net/2016/03/23/bart-ehrmans-mainstream-scholarship-textual-criticism> (11 Nov 2017)

¹⁴<http://www.missosology.info/forum/viewtopic.php?f=6&t=258627&start=2310> (11 Nov 2017)

It is very important to note at this point that the idiomatic meaning of *kick the bucket*, just like the meaning of the verb *die*, is not always ‘die’. Both expressions can be used to describe situations in which nobody/nothing physiologically dies. That is why they also work with entities that are not living organisms. This becomes obvious in (2i)-(2k), as neither electronic devices nor views can literally die. All that electronic devices can do that comes close to dying is stop functioning, and all that can happen to views that comes close to dying is that they are no longer held by anyone.

The definite determiner *the* is not the only part of the idiom *kick the bucket* that can be exchanged, though. You also find examples in which the entire NP-complement *the bucket* has been replaced:

- (3) a. When is the next vehicle auction, mine finally *kicked it*.¹⁵
- b. Marriage, multiple children, a mother at home to raise the kids belonged to an era now *kicking its last*.¹⁶
- c. Well it hit about 90 outside today. The only reason it didn’t get [even] hotter than that [inside] is because we have 2 AC units, and the second (not dead) one was working like a champ. Regrettably, the house requires two units because the guy that built the house was a moron and decided he’d sacrifice 90% of the second story to make a giant, shitty-looking vaulted ceiling that costs an arm and a leg to heat and cool (not to mention how shitty it is to clean). Now, this guy was a legit, full-blown southern idiot. He thought that huge open spaces make it easier for ACs to cool them. So he bought a good unit for downstairs, and decided to be thrifty by getting a smaller unit for upstairs. Needless to say that the massive amounts of hot air floating upwards overworked the small unit, and now it’s *kicking its last*.¹⁷

¹⁵<http://www.juneapolice.com/viewindividualdispatch.php?UID=1193> (11 Nov 2017)

¹⁶*The Tying of Threads*. Joy Dettman

¹⁷<https://talk.turtlerockstudios.com/t/say-something-random-5-2/109181/5576> (11 Nov 2017)

Here, too, it is the case that all of the examples have the idiomatic reading, that the idiomatic reading is the only reading available (because neither vehicles nor ACs nor eras can literally kick anything), and that the idiom's meaning is not 'die' (as neither vehicles nor ACs nor eras can literally die). For the era in (3b), the reading of *kick the bucket* is something like 'end'; for the vehicle in (3a) and the AC in (3c) it is something like 'stop functioning', just like for the scanner in (2i) and the Samsung in (2j).¹⁸

If you consider the lexical substitutions in (2) and (3), the claim that the idiom *kick the bucket* shows no lexical flexibility whatsoever is difficult to keep up; it seems to show a certain degree of lexical flexibility when it comes to its NP-complement. However, I could not find any evidence that *kick the bucket* allows for a variation of its verb *kick*. That is a far cry from saying that it does not, of course. The data in (4) at least show, however, that replacing *kick* with some of its synonyms and antonyms (in a wider sense) results in the loss of the idiomatic meaning.

(4) # Kim {booted, punted, clutched, caressed} *the bucket*.

I will now turn to the morphological flexibility of *kick the bucket*. This does in no way mean, though, that we will not get to see many more examples that indicate that *kick the bucket*'s NP-complement is lexically flexible to some extent.

3.2.2 The morphological flexibility of *kick the bucket*

When it comes to the morphological flexibility of the idiom *kick the bucket*, the two standard claims in the literature are that its noun *bucket* cannot occur in the plural and that its verb *kick* cannot occur in a progressive without causing a complete loss of idiomatic meaning. With regard to the first of these two claims, consider the data in (5).

¹⁸At this point, one may wonder whether these examples with *it* or *its last* are really examples of the idiom *kick the bucket*, meaning that *the bucket* has been replaced by *it* and *its last*, or whether these examples belong to the highly related idiom *kick one's last kick*?

- (5) a. They say famous people die in threes, and I've believed them since that summer in 1997 when Nusrat Fateh Ali Khan, Mother Teresa and Lady Di all *kicked their respective buckets* in unison and the world ran out of flowers.¹⁹
- b. No offense to All concerned here, but – regarding ALL of our Old-school, secondhandedly racist, knee-jerk republican parents – the sooner the old fuckers *kick their respective buckets*, the better off the country eventually becomes.²⁰
- c. I can't all be like William Shakespeare, who screams to the rooftops how Romeo and Juliet are going to *kick their respective buckets* by the end of the story.²¹
- d. Speaking of dead people, Pat's next album by Pretenders came out after their bassist and guitarist *kicked their respective buckets*.²²
- e. As he became more comfortable, I even talked about death itself and speculated how each of us might eventually *kick our respective buckets*.²³
- f. Also, quite frankly, he's the guy I plan to share the rest of my life with from now until we *kick our respective buckets*.²⁴
- g. Limbs and blood fly everywhere, and while it's fun watching these dickheads *kick their respective buckets*, Halloween H2O is another dreadful sequel that should never have seen the light of day.²⁵
- h. I'm still glad he's dead. (I'll say the same thing when Mugabe and lots of other petty power-mad tyrants *kick their respective buckets*).²⁶
- i. I'm going to be needing a new computer at the home office (both my older ones have more or less *kicked their respective buckets*) ...²⁷

¹⁹<http://www.juneapolice.com/viewindividualdispatch.php?UID=1193> (11 Nov 2017)

²⁰<https://physioprof.wordpress.com/2008/10/08/for-fucks-sake-dad> (11 Nov 2017)

²¹<https://thefakeredhead.com/2017/04/29/3-reasons-to-use-foreshadowing-in-your-story> (11 Nov 2017)

²²<http://www.rocksolidpodcast.com/rocksolidguide/2015/04/episode-194-10-out-of-10.html> (11 Nov 2017)

²³<https://greatnonprofits.org/org/hopelink-of-southern-nevada> (11 Nov 2017)

²⁴<http://cooscafeinmorocco.blogspot.de> (11 Nov 2017)

²⁵<http://www.efilmcritic.com/review.php?movie=10&reviewer=14> (11 Nov 2017)

²⁶<http://beatroot.blogspot.de/2006/03/milosevic-is-dead.html?m=0> (11 Nov 2017)

²⁷<https://fanboydestroy.blogspot.de/2014/11/some-changes-to-formula-on-few-fronts.html> (11 Nov 2017)

- j. Oxygen is the enemy of wine. Open a bottle and it starts to die, right then and there. The demise may take minutes or long, lingering days, and there may be some interesting ... maybe even salutary ... effects along the way (certain components *kick their respective buckets* faster than others), but the fact is that exposing a wine to oxygen is signing its death warrant.²⁸

In every example in (5), *bucket* occurs in the plural form *buckets*, but this plural does not block the idiomatic reading of *kick the bucket*. All of the examples in (5) have the idiomatic reading, and for (5i) and (5j), it is again the only reading available. For the computer, the reading of *kick the bucket* is something like ‘stop functioning’ again, for the components of wine, it is something like ‘dissolve’.

The fact that adjectives, like *respective*, and other modifiers can crop up before the noun *bucket* and that such an idiom-modifier combination is to be interpreted in one of at least two different ways will be covered in the following section (Section 3.2.3). For now, the important part is that there are, in fact, idiomatic occurrences of *kick the bucket* in which the noun *bucket* occurs in the plural form *buckets*.²⁹

With regard to the second claim on the morphological flexibility of *kick the bucket*, namely that its verb *kick* cannot occur in a progressive form, consider the data in (6), (7), and (8). In (6) and (7), *kick* is part of a present progressive. In (8), it is part of a present perfect progressive.

- (6) a. For every like that Chris Evans gets on his Instagram for a fresh cooked steak or some shit, somewhere else in the world a dude *is kicking the bucket* because of a completely preventable disease.³⁰

²⁸<http://www.thoriverson.com/?tag=cotes-du-jura> (11 Nov 2017)

²⁹Interestingly, most of the examples with *bucket* in the plural that I found also feature the attributive adjective *respective*. A possible explanation for this fact is that the adjective *respective* is responsible for the occurrence of the plural form of *bucket* because the authors of those examples thought that a noun occurring after *respective* needs to be pluralized.

³⁰<https://yourfriendshouse.com/opinion/anti-vaxxers-are-the-worst-kind-of-people> (11 Nov 2017)

- b. But seeing how pretty much everyone in Hollywood *is kicking the bucket* right now, I think the time is right for Mel Brooks to dust off that big-ass dark helmet, find the right actor, and get to it!³¹
- c. Truth be told, the father's affection for his child, despite the fact that he *is kicking the bucket*, is stunning and profoundly moving.³²
- d. A standout amongst the most tear-creating scenes is the point at which she needs to confront her young children and illustrate that she *is kicking the bucket*.³³
- e. Her latest cooperation in the musical show is *El shading de la pasion*, in 2014, where she played Daniela Suarez, a young lady who *is kicking the bucket* of affection for Marcelo Escalante, yet he is infatuated with Lucia.³⁴
- f. *I'm kicking the bucket* to get my hands on book 6 now on account of how things are cleared out!³⁵
- g. In the event that your old PC *is kicking the bucket* on you, likely the time has come to get yourself the new bit of innovation that is there.³⁶
- h. Think about that and tell me again that photography *is kicking the bucket*. Photography is not dead, photography has never been more important than it is today.³⁷
- i. Another year *is kicking the bucket* and a new one is about to draw its first breaths.³⁸
- j. NOPE, I ain't going out like Dad. It's not how I lived most of my life (well, the high points anyway) and I ain't *kicking no bucket* that way.³⁹

³¹<https://moviepilot.com/posts/3738983> (11 Nov 2017)

³²http://www.handicap-international.us/jordan_turning_a_father_s_despair_to_hope (11 Nov 2017)

³³<https://chopnews.com/top-five-hollywood-emotional-movies> (11 Nov 2017)

³⁴<https://marriedbiography.com/natalia-guerrero> (11 Nov 2017)

³⁵<http://freepdfhost.com/hate-me-pdf> (11 Nov 2017)

³⁶<http://www.doloresashcroft-nowicki.com/product-category/computer> (11 Nov 2017)

³⁷<https://fstoppers.com/originals/photography-dead-3059> (11 Nov 2017)

³⁸<http://www.butchtastic.net/tag/pictures> (11 Nov 2017)

³⁹<http://www.fiero.nl/forum/Forum6/HTML/115161.html> (11 Nov 2017)

Even though all of the examples in (6) feature *kick the bucket* in the present progressive, the idiom retains its idiomatic reading in every single one of them. For (6g)-(6i), the idiomatic reading is again the only one available, and it is again not ‘die’. A PC that is kicking the bucket is becoming less and less usable. When photography is kicking the bucket, it is less and less pursued. And a year that is kicking the bucket is ending.

In (6e) and (6f), *kick the bucket* is used with humans, i.e. living beings, which, in stark contrast to (concrete or abstract) objects, are perfectly capable of physiologically dying. Yet, in (6e) and in (6f), nobody is actually dying. Instead, what is expressed in these two examples is the experience of going through intense emotions. In (6e), Daniela Suarez is suffering from her unreturned love for Marcelo Escalante. In (6f), the speaker is in intense anticipation of having access to some book. This shows that the idiom *kick the bucket* can also be used in these particular meanings of *die*.

Not only does *kick the bucket* occur in progressive forms used in the progressive’s core function to talk about an ongoing event, i.e. to express imperfective aspectuality, it also occurs in progressive forms used to talk about an event taking place in the future. Whereas the present progressives in (6) refer to an event beginning before the reference time and most probably but not necessarily extending beyond it,⁴⁰ the present progressives in (7) refer to an event taking place or at least culminating after the reference time, which in the examples in (7) coincides with the utterance time.

- (7) a. I have a screen cage at the moment with vines and all, but the live plants *are kicking the bucket* soon.⁴¹

⁴⁰In the example in (6a), there are potentially many reference times, namely one for every like that Chris Evans gets, which gives the overall statement a certain timelessness. Timelessness also holds for the examples in (6d) and (6e), where the reference time is situated within a fictive situation. It should also be mentioned that the example in (6b) is most probably (to be) interpreted iteratively, in the sense that it is not the case that many people in Hollywood are simultaneously in the process of (slowly) dying but rather that they drop dead in quick succession, i.e. one after the other.

⁴¹<https://www.chameleonforums.com/threads/bamboo.69512> (23 Apr 2019)

- b. ... I *am kicking the bucket* soon, seeing the piddle Doctor tomorrow, blood in the urine. ... The way things are going I think I will be dead by 75 ... ⁴²
- c. I got first class on my flight home. It was a dollar cheaper than coach. Can I just relax and enjoy the good turn of luck? No! Yes, but no. Is God like ‘Well, she *is kicking the bucket* soon so let’s at least throw a few perks her way here and there. We’ll give her a nice flight back to Minnesota, with a flight attendant to load her up on vodka lemonade, chardonnay and assorted cheeses.” I waiver between “Screw it, enjoy!” and “Wait! I am not ready to kick the bucket!” If that’s why I am in first class please put me down with the luggage.⁴³
- d. Google Reader *is kicking the bucket* soon which means if you’re signed up to get emailed articles I write, you will get them no longer!⁴⁴
- e. Fortunately or sadly “X-Statix” and “Runaways” *are kicking the bucket* soon so that’s it for them, but there’s always something to take their place.⁴⁵

Again, *kick the bucket* retains its idiomatic reading in every single example. And again, the non-‘die’ idiomatic reading is the only one available for some of the examples: What is expressed in (7d) and (7e) is that soon after the utterance time (which coincides with the reference time), Google’s Web feed reader as well as the comic books “X-Statix” and “Runaways” will be discontinued.

The present perfect progressive examples in (8) behave similarly to the present progressive example in (6f) in that they are also not about people dying but about people experiencing intense anticipation. After these examples, I will directly move on to the syntactic flexibility of *kick the bucket*.

⁴²<https://forums.atomicmpc.com.au/profile/155180-mickf> (23 Apr 2019)

⁴³<https://www.healtheo360.com/stories/moment-of-truth> (23 Apr 2019)

⁴⁴<http://www.budgetforhealth.com/tag/cholesterol> (11 Nov 2017)

⁴⁵<http://spatulaforum.blogspot.com/2004/06> (23 Apr 2019)

- (8) a. Meghan Markle is known for being a fruitful on-screen character and humanitarian. In any case, now that she's professedly dating Prince Harry, fans *have been kicking the bucket* to know considerably more about the brunette excellence who is fulfilling him so!⁴⁶
- b. On the off chance that you've *been kicking the bucket* to set your old flat mate up with your life partner's kin, you may accept this open door to attentively situate them by each other.⁴⁷
- c. Because a marriage salon conveys your most loved fashioner, that doesn't mean it'll have the exact wedding dress you've *been kicking the bucket* to try on.⁴⁸
- d. It doesn't cost a great deal to hide a sachet of perfumed air pocket shower, a shiny magazine or a novel you've *been kicking the bucket* to peruse.⁴⁹
- e. As far back as we moved into our home six years prior, we *have been kicking the bucket* to take care of our kitchen, and it's at long last time!⁵⁰
- f. *Have you been kicking the bucket* to have clean and radiant skin that'll keep going for a considerable length of time?⁵¹
- g. Is there a book you *have been kicking the bucket* to peruse? A self-awareness workshop you wish you could take?⁵²
- h. Envision that your companion saw a film you've *been kicking the bucket* to see.⁵³
- i. I've *been kicking the bucket* to make this record since Idol.⁵⁴

⁴⁶<http://www.thenewstrack.com/meghan-markle-5-things-to-know-about-the-suits-star-whos-dating-prince-harry> (11 Nov 2017)

⁴⁷<https://weddingdressescall.com/category/fall> (11 Nov 2017)

⁴⁸<https://www.slideshare.net/WeddingDoers/know-these-things-before-buying-your-wedding-dress> (11 Nov 2017)

⁴⁹<https://johnjmilligan.tumblr.com> (11 Nov 2017)

⁵⁰<https://kitchenwaresimprovement.com> (11 Nov 2017)

⁵¹<http://forum.orangehrm.com/viewtopic.php?f=2&t=32102> (11 Nov 2017)

⁵²<https://teechip.com/stores/book-was-better> (11 Nov 2017)

⁵³<http://video.hispage.info/watch?v=W53TaUWpFXk> (11 Nov 2017)

⁵⁴<https://ovomp3.com/kelly-clarkson-reveals-meaning-life-cover-teases-move> (11 Nov 2017)

3.2.3 The syntactic flexibility of *kick the bucket*

A non-idiomatic expression is usually syntactically flexible, which means that its constituents can be rearranged, making it compatible with different syntactic structures. An idiom, on the other hand, can be (partly) fixed, so that (some of) its constituents have to stay together. They might hence be compatible with some but not with other structures. The (in)compatibility of a certain idiom with a certain syntactic structure does not only reveal information about the idiom but also about the syntactic structure. The standard claim about *kick the bucket* is that it cannot be passivized without losing its idiomatic meaning. Yet, here are my findings for *kick the bucket* in the passive. Many of them also show one or two other variations, most of which I have already shown examples for.

- (9) a. Leaving my beautiful 60 degree temperatures in Dallas, Texas, for the 4 degree (*during the day!*) temperature of Minneapolis, Minnesota isn't my idea of a good time, but I have a bucket list to get through, dagnabbit! I *will* visit every arena in hockey before *the proverbial bucket has been kicked*.⁵⁵
- b. We are all going to die. ... Because, as Jim Morrison sang, "No one here gets out alive." And no one here knows when the bell will toll or when *the bucket will be kicked*.⁵⁶
- c. When you are dead, you don't have to worry about death anymore. ... *The bucket will be kicked*.⁵⁷
- d. I also found out that when *my bucket is kicked*, imma need a custom sized coffin.⁵⁸

⁵⁵<https://starsfandebbie.blogspot.com/2012/01/away-game-2012.html> (11 Nov 2017)

⁵⁶<https://cherylcapaldotraylor.com/2016/02/29/take-the-leap> (11 Nov 2017)

⁵⁷J. Pascha & M. Louis, *The Single Man*, iUniverse. p. 195.

⁵⁸http://stalkture.com/p/drewcifer_138/44883734 (11 Nov 2017)

- e. A: Thanks for revealing these hidden treasures (for me, anyway) – must see these places – they’re on my long bucket list which I hope to do before *my bucket gets kicked!*
B: I don’t think *your bucket will be kicked* anytime soon.⁵⁹
- f. I truly hate to be the bearer of bad news, but since there’s no tender way to deliver the blow, I’m just going to come right out and say it. You see, you and I, well ... we’re dead, or if it makes it easier to hear, I have perished. And, if a softer delivery is still necessary ... *your bucket has been kicked.*⁶⁰
- g. So folks, the message is simple: if you feel the desire to do something, do it now before *your bucket is kicked.*⁶¹
- h. It’s clear that *Stein’s bucket is going to be kicked* right from the start. Despite this, the death still carries emotional weight ...⁶²
- i. The man’s number was up. His ticket was called. *His bucket was kicked.* There was no *because* whatsoever. It was just his *time.*⁶³
- j. A: It was the last item on his bucket list. Mission accomplished.
B: You are right. He did it, and now *his bucket has been kicked!*⁶⁴
- k. You know those movies about dying people turning their lives 180 degrees when discovering *their bucket is about to be kicked?*⁶⁵
- l. You love a character, but at first you enter into the relationship half heartedly with one foot out of the door, always suspecting that they might end up brown bread by the end of the experience. [T]hen before you know it you’re hooked on them, they make you laugh, you want to eschew your real life partner for your new digital companion, then POW they *get their bucket kicked.* Here’s my list of the most upsetting deaths in video game history.⁶⁶

⁵⁹<http://www.neverstoptraveling.com/day-tours-in-5-great-eastern-european-cities> (11 Nov 2017)

⁶⁰Jones, Phillip E. *Crystal Moon: World of Grayham*. Brigham Distributing, 2009.

⁶¹<http://www.oliverchronicle.com/kicking-the-bucket-list> (11 Nov 2017)

⁶²<http://famousfanboy.blogspot.de/2011/05/brightest-day-my-tuppence-worth.html> (11 Nov 2017)

⁶³Santora, Frank. *After You Die: Unveiling the Mysteries of Heaven*. Simon and Schuster, 2012. page 8.

⁶⁴https://www.liveleak.com/view?i=d32_1499906847&comments=1 (11 Nov 2017)

⁶⁵<http://emptysinkpublishing.com/archives/issue-16/4529-2> (11 Nov 2017)

⁶⁶<https://thinklikeashark.wordpress.com/2010/03/page/2/> (11 Nov 2017)

- m. Dead Apple Tours runs trips throughout the week – check the schedule for available dates and times. Tours depart from 36th & Madison, across from the Morgan Library. Corral fellow thanatologists and let Dead Apple Tours showcase sites where *buckets were kicked*, dust was bitten, and mortality sponges were squeezed dry.⁶⁷

There are also examples of *kick the bucket* with a modifier, mostly *last*:

- (10) a. Rodney’s boss made him work all that weekend ... Rodney [a dry-waller] and the Beckster [his girlfriend, who had just died] were not engaged in holy wedlock, and dry-wallers only get time off when *the familial bucket is kicked* by someone officially attached to the waller in question.⁶⁸
- b. I felt his neck, looking for a pulse. ... He was cold to the touch. ... Cold as in he had *kicked his last bucket*.⁶⁹
- c. Deep apologies for the severe lack of updates recently. For those of you who don’t know, my computer’s motherboard finally *kicked its last bucket*, which lead to lots of complications and left me computerless for longer than was desirable.⁷⁰
- d. However, if your supply was on its last leg, maybe enabling hyperthreading helped it *kick its last bucket*?⁷¹
- e. My pair of Ariat boots finally *kicked their last bucket* after 5 years of hard use.⁷²
- f. Managed to fix my “Old Faithful” boots which, after 15 years, I thought had well and truly *kicked their last bucket*!!⁷³

⁶⁷<https://www.groupon.com/deals/dead-apple-tours> (11 Nov 2017)

⁶⁸Britson, Gary. *Modern Communications Techniques in Des Moines (and Other Stories)*. Murphy’s Law Press, 2009. page

75.

⁶⁹*A Cast-Off Coven: A Witchcraft Mystery* by Julieta Blackwell.

⁷⁰<http://anniesadventuring.blogspot.de/2011/04/on-daily.html> (11 Nov 2017)

⁷¹<https://forums.ni.com/t5/PXI/PXIe-1075-power-on-failure/td-p/1469104> (11 Nov 2017)

⁷²<http://www.horsetackreview.com/review-display.php?ID=7477> (11 Nov 2017)

⁷³<https://www.facebook.com/andyshoesmithsstalbins> (11 Nov 2017)

- g. God bless you my man and whatever wireless network you used to let us know that *No bucket was kicked* and that ol' clock is still ticking.⁷⁴

Even ellipsis seems to be possible:

- (11) a. After 21 years of loyal service not only to Ugandans but also to some patients from Burundi, South Sudan, Western Kenya, and Rwanda, Uganda's only radiotherapy machine has *kicked its last*.⁷⁵
- b. As 2016 *kicks its last*, 2017 circles the dimming fire, yellow eyes alight with eagerness. It's hungry, this new year.⁷⁶

3.2.4 *X kicks Y's bucket*

As far as I know, *X kicks Y's bucket* (\rightsquigarrow_{id} 'X kills Y') is not yet mentioned in the literature at all. I will simply present a list of examples here, without any further comments.

- (12) a. It's kind of ironic that I died twice on the operating table only to be revived, but *something as daft as MRSA could have almost kicked my bucket* :)⁷⁷
- b. I have owned three guinea pigs in my life. The first one was named Guinea. *Brilliant*. Guinea made it a week before kicking the bucket. Actually, it was more like *I kicked his bucket for him*. Apparently, dropping your pet down the stairs does not assist in the longevity of its overall lifespan.⁷⁸
- c. Claudia kills Vincent in the final scene before "God" arrives. He obviously had no major part in her plans so *she kicked his bucket*.⁷⁹

⁷⁴<http://www.dodgetalk.com/forums/showthread.php?p=1950997> (11 Nov 2017)

⁷⁵<https://www.africanexponent.com/post/public-outcry-ugandas-sole-radiotherapy-machine-expires-2860> (11 Nov 2017)

⁷⁶<https://joshuamreynolds.wordpress.com/tag/music> (11 Nov 2017)

⁷⁷<http://www.juneaupolice.com/viewindividualdispatch.php?UID=1193> (11 Nov 2017)

⁷⁸<https://jfknoop.wordpress.com/2015/07/06/the-unfortunate-caretaker> (11 Nov 2017)

⁷⁹http://www.funtrivia.com/trivia/VideoGames/Silent-Hill-3-15308_3.html (11 Nov 2017)

- d. *Alcide*, who was previously holding Debbie back, moves quickly and *intercepts Marcus, jabbing him in the throat and kicking his bucket*.⁸⁰
- e. That's because the Vindicator-1X suffers from many different issues, not just the amount of hardpoints. Its shape, its low mounted arms, as well as its small engine already makes it a candidate for quirks, but *what really kicked its bucket* is PGI's completely sub-par version of machine gun.⁸¹
- f. Don't worry, I'll make a couple comics for this storyline before *I kick its bucket*.⁸²
- g. After shooting this video, I tried to kill the spider, but he fell under my bed. Yikes. *I then moved my bed and succeeded in kicking its bucket*.⁸³
- h. *I kicked their bucket* – literally, not figuratively or metaphorically – and stomped away.⁸⁴
- i. Innocent bystanders, heroes and villains alike *get their buckets kicked* while some of the villains appear to have more lives than the average (resurrection-prone) comic book hero.⁸⁵
- j. And since he is not in the “characters relevant to this expansion” part of the Legion site, he will defiantly *have his bucket kicked* the minute he steps on that island.⁸⁶
- k. What is the appropriate emotion when a world-historical evil-doer kicks the bucket (or in the case of Al-Zarqawi, *has his bucket kicked*)?⁸⁷
- l. If he is the last, then there must be some kind of second in command who will take his place when he *has his bucket kicked*.⁸⁸

⁸⁰http://gegegegeo.blogspot.de/2011/09/tv-show-and-tell-true-blood-season-4_1.html (11 Nov 2017)

⁸¹https://mwomercs.com/forums/topic/238396-sized-hardpoints/page_st_80 (11 Nov 2017)

⁸²<http://www.moc-pages.com/moc.php/412914> (11 Nov 2017)

⁸³<http://readhealtharticle.com/watch?v=8Si2uGC7toE> (11 Nov 2017)

⁸⁴<https://stunnedspeechless.blogspot.de/2015> (11 Nov 2017)

⁸⁵https://www.goodreads.com/review/show/487654150?book_show_action=true (11 Nov 2017)

⁸⁶<https://us.battle.net/forums/en/wow/topic/19745184770?page=2> (11 Nov 2017)

⁸⁷<http://www.thebandarlog.com/arch/arch36.html> (11 Nov 2017)

⁸⁸<https://us.battle.net/forums/en/wow/topic/19486468593?page=2> (11 Nov 2017)

- m. I nominate Ornyx for high king now that Varian *got his bucket kicked*.⁸⁹
- n. Ever since my old man *got his bucket kicked for him*, Stepmother and her demon spawn tried to kick me after him.⁹⁰
- o. The first part of the mission is the only difficult part, but you're going to be attacked by multiple waves from three sides, AND have to make sure Elder Jonah doesn't kick the bucket (or *get his bucket kicked for him*, as the case may be).⁹¹

3.3 Implications for the analysis of *kick the bucket*

This chapter presented new empirical observations on the lexical, morphological, and syntactic flexibility of the “frozen” idiom *kick the bucket*. These new observations invite the following conclusions: *kick the bucket* turns out to behave much more like its non-idiomatic counterpart than is usually assumed. It is not completely frozen but shows some flexibility when it comes to its NP complement, can occur in a progressive form, and can even be passivized in some contexts. Therefore, a number of empirical generalizations concerning the alleged lexical, morphological, and syntactic frozenness of the idiom *kick the bucket* seem to be false or at least too restrictive.

As a consequence, analyses that conceive of *kick the bucket* (and other idioms of this kind) as one single lexical entry consisting of either a fixed phrase or even a “word with spaces” (which, being a word, shows no internal syntactic structure whatsoever) are highly implausible. The new findings suggest that *kick the bucket* (and other idioms of this kind) should rather be analyzed as consisting of a combination of individual word-level lexical entries that combine according to the standard rules of syntax. Chapter 4 of this dissertation follows that path.

⁸⁹<https://us.battle.net/forums/en/wow/topic/20748915792> (11 Nov 2017)

⁹⁰<https://rcgumby.deviantart.com/art/The-Maltese-Slipper-3-409469333> (11 Nov 2017)

⁹¹<http://www.kaoticsilence.com/guildwars/gwsnfwalkthru12.html> (11 Nov 2017)

Chapter 4

The syntactic flexibility of semantically non-decomposable idioms

Bargmann & Sailer (2018)[‡]

4.1 Introduction

In this paper, we make a theoretical point for loosening the close ties that Nunberg et al. (1994) claim exist between the semantic decomposability and the syntactic structure of idioms. We argue for a more uniform syntactic treatment of idioms within and across languages, saying that semantically non-decomposable idioms (henceforth abbreviated as SNDIs) like *kick the bucket* can and should be analyzed as consisting of individual word-level lexical entries that combine according to the standard rules of syntax and contribute a piece of the meaning of the idiom.

We mainly base our case on the contrast between English and German when it comes to verb placement, constituent fronting, and passivization (4.2 and 4.3). Our findings suggest that the differences in the syntactic flexibility of idioms might be due to differences among the semantic and pragmatic constraints that hold for the involved

[‡]This chapter has also been published in M. Sailer and S. Markantonatou (Eds.), *Multiword Expressions: Insights from a Multi-lingual Perspective*, pp. 1–29. Berlin: Language Science Press. My contribution to it mainly consists in but is in no way limited to Section 4.2 “Some data and a former approach”, Section 4.3.2 “English”, Section 4.4 “Analysis”, and Section 4.5.2 “French”.

syntactic constructions in a particular language, rather than to differences in the syntactic encoding of the idioms themselves.

The central aspect of our analysis (4.4) is that SNDIs are syntactically analyzed as combinations of individual words, and that these words can make identical semantic contributions to the overall meaning of the idiom. We formulate our analysis in Lexical Resource Semantics (Richter & Sailer 2003).

Before we conclude the paper (4.6), we give a short outlook on the behavior of SNDIs in Estonian and French (4.5), which provides further evidence for our argument.

4.2 Some data and a former approach

In this section, we will describe the behavior and architecture of SNDIs as perceived by Nunberg et al. (1994). We will look at their analysis of English data and challenging data from (mostly) German.

4.2.1 English SNDIs in Nunberg, Sag & Wasow (1994)

Nunberg et al. (1994), henceforth NSW, divide English idioms into two categories: Idiomatically Combining Expressions (ICEs) and Idiomatic Phrases (IPs).

ICEs, exemplified here by *pull strings*, consist of individual word-level lexical entries (*pull* and *strings*), each of which contributes a piece of the meaning of the idiom as a whole (*pull* \approx ‘use’ and *strings* \approx ‘connections’).

IPs, exemplified here by *kick the bucket*, are syntactically and semantically monolithic, i.e. the phrase as a whole is stored in the lexicon and coupled with the overall idiomatic meaning (*kick the bucket* \approx ‘die’). In other words: NSW do not assume the meaning of an IP to be distributed over individual parts, as there are none in their opin-

ion, not even in those cases where a division into syntactic constituents seems highly plausible because the idiom appears to have a regular syntactic structure (as is the case with *kick the bucket*).

NSW base this bifold classification on the empirical observation that many English idioms (those that they then categorize as ICEs) are syntactically flexible to a certain degree, whereas some others (those that they then categorize as IPs) seem to be syntactically frozen. None of the sentences in (1) can normally be understood in the idiomatic sense.

- (1) a. * *Alex kicked the cruel bucket.* (additional adjective)
 b. * *Alex kicked a bucket.* (determiner variation)
 c. * *The bucket (that) Alex kicked was cruel.* (restrictive relative clause)
 d. * *The bucket was kicked.* (passive)
 e. * *The bucket, Alex kicked.* (NP-fronting)
 f. * *It was the bucket that Alex kicked.* (*it*-cleft)
 g. * *What bucket did Alex kick?* (*wh*-interrogative)

According to NSW, it is the syntactic monolithicity of IPs that explains their non-compatibility with the syntactic constructions in (1). All the parts of an IP must be given in the exact same linear sequence provided by its phrasal lexical entry. Any disruption of that sequence results in ungrammaticality.

This syntactic monolithicity of IPs, they say, stems from their meaning not being distributed over individual parts. ICEs like *pull strings*, on the other hand, allow for variations that affect the meaning of their individual components. For example, the meaning of the complement-NP's head noun can be restrictively modified or quantified over. IPs, in contrast, do not allow for any of these semantic operations, which is the

reason for the ungrammaticality of (1a)–(1c).

All things considered, NSW observe a strong correlation between the semantic non-decomposability and the syntactic fixedness of IPs, which induces them to conclude that there exists a conditional dependency between the two. If an idiom is semantically non-decomposable, so they argue, it is syntactically fixed and hence to be analyzed in terms of a phrasal lexical entry, i.e. a monolithic syntactic block.

4.2.2 Challenging data for Nunberg, Sag & Wasow (1994)

NSW discuss the observations made for German in earlier versions of Schenk (1995) and Webelhuth & Ackerman (1999) that SNDIs like *den Löffel abgeben* ‘die’ (lit.: ‘pass on the spoon’) or *ins Gras beißen* ‘die’ (lit.: ‘bite in the grass’) can undergo syntactic processes. These include the dislocation of the finite verb to the second position (V2), see (2), and the dislocation of idiom chunks to the initial position (the *Vorfeld*), see (3a). The example in (3a) is taken from Trotzke & Zwart (2014: 138), example (3b)¹ is a corpus example.²

(2) Dann gab Alex den Löffel ab.
then passed Alex the spoon on
 ‘Then Alex died.’

(3) a. Den Löffel hat er ab-gegeben.
he spoon has he on-passed
 ‘He died.’

b. Den Löffel habe er noch nicht ab-geben wollen, ...
the spoon has he still not on-pass want
 ‘He didn’t want to die yet, ...’³

¹IDS corpora: N92/JAN.03243 Salzburger Nachrichten, 28.01.1992

²We will not provide a full morphological glossing for German, but only indicate the parts that are relevant for the discussion at hand.

³IDS corpora: N92/JAN.03243 Salzburger Nachrichten, 28.01.1992

NSW briefly explore a purely linearization-based/phonological explanation of data like those in (4). However, German SNDIs also allow for passivization, see (4), a syntactic operation that cannot be analyzed as a simple word-order alternation, as it involves adding, inflecting, and often also deleting material.

- (4) Hier wurde der Löffel ab-gegeben.
here was the spoon on-passed
 ‘Someone died here.’

These data suggest that an IP-like analysis is less attractive for German than for English, as there seem to be no syntactic restrictions in German that correlate with semantic non-decomposability.⁴

It is worth noting that English SNDIs are not necessarily fully fixed either. We will list three commonly mentioned types of data that support this (see, for example, Baldwin & Kim 2010) and add a fourth one. First, many English SNDIs have the same syntactic structure as any regular English V-NP combination, which sets SNDIs apart from syntactically irregular expressions like *kingdom come* ‘paradise’. Second, English SNDIs show full morphological flexibility on their verbal heads, see (5).

- (5) a. Alex kicks/kicked the bucket.
 b. Kim’s *kicking* the bucket caused great concern.

Third, SNDIs allow for certain modifiers within the complement-NP, see (6).⁵

- (6) Alex kicked the *political/proverbial/goddamn/golden* bucket.

⁴Söhn (2006) pursues an IP-analysis of German SNDIs. He accounts for the data in (2) and (4) by his formulation of quite abstract phrasal lexical entries that leave many syntactic relations underspecified. A disadvantage of this account is that the lexical representation of SNDIs differs dramatically from language to language, even for syntactically very similar idioms, such as those consisting of a verb and a direct object. Müller (2013b: 923) argues that an analysis that reflects cross-linguistic parallelism is generally to be preferred over one that does not.

⁵Semantically, however, none of these modifiers seems to apply to the meaning of idiomatic *bucket*. For suggestions on how these additional adjectives should be interpreted, see Ernst (1981) and Potts (2005), among others.

Fourth, we even find passive examples of *kick the bucket*, see (7).

- (7) When you are dead, you don't have to worry about death anymore. . . .
*The bucket will be kicked.*⁶

We will turn to such examples in 4.3.2. For the moment, it suffices to show that the postulated causal relation between semantic non-decomposability and syntactic fixedness loses much of its appeal in light of these data.

We conclude that semantic non-decomposability and syntactic fixedness are not necessarily mutually dependent, i.e. an SNDI can show syntactic flexibility. This is rather obvious in German, but there are also some indications for English.

4.3 Construction-specific restrictions

In this section, we will look at German and English and point out the differences between these two closely-related languages when it comes to verb placement, constituent fronting, and the passive voice.

4.3.1 German

We will now go through the three mentioned syntactic processes in German and show that they impose no (or rather weak) semantic or pragmatic restrictions.

4.3.1.1 V2-Movement

In German, the position of the finite verb determines the clause type. In declarative main clauses, for example, the finite verb occurs in second position (V2), see (8a). In subordinate clauses, it typically occurs in final position (V-final), see (8b).

⁶*The Single Man* by John Paschal & Mark Louis. 2000. Lincoln, NE: iUniverse. Page 195.

- (8) a. Alex hat gestern einen Freund mit-gebracht.
Alex has yesterday a friend along-brought
 ‘Alex brought along a friend yesterday.’
- b. dass Alex gestern einen Freund mit-gebracht hat
that Alex yesterday a friend along-brought has
 ‘that Alex brought along a friend yesterday’

V-final is taken to be the basic position. V2 is taken to be derived. The dislocation of the finite verb from V-final to V2 is commonly referred to as V2-movement. There are only very few restrictions as to what verbs may occur in V2. All of these restrictions are either morphological or syntactic, never semantic or pragmatic (Schenk 1995: 262-263). As already mentioned, the fronted verb must be finite, compare (8a) above with (9).⁷

- (9) * Alex mit-gebracht gestern einen Freund hat.
Alex along-brought yesterday a friend has

If the fronted verb is a particle verb, the particle cannot be fronted together with the verb, see (10a) and (10b).⁸

⁷As pointed out to us by a reviewer, Haider (1997: 24) presents the example in (ia) and suggests that some operators require the verb to be in final position to be in their semantic scope. This could be interpreted as a scopal effect of V2-movement, but Meinunger (2001) shows convincingly that the data should be analyzed as a syntactic ban on stranding these operators rather than as a semantic effect of V2-movement.

- (i) a. Der Wert hat sich weit mehr als bloß verdreifacht.
 the value has itself far more than merely tripled
 ‘The value has far more than merely tripled’
- b. * *Der Wert verdreifachte sich weit mehr als bloß.*

⁸We are grateful to a reviewer for bringing up data in which a particle immediately precedes a fronted finite verb, see the example in (i) taken from Müller (2005: 14), and, therefore, could be mistaken as counterexamples to the generalization stated above. As Müller (2005) shows, however, these data are best analyzed with the particle inside the *Vorfeld* and, therefore, are compatible with the generalization.

- (i) ... gut klar komm ich nicht.
 good clear come I not
 ‘... I am not coping well.’

- (10) a. Alex bringt morgen einen Freund mit.
Alex brings tomorrow a friend along
 ‘Alex will bring along a friend tomorrow.’
- b. * Alex mit-bringt morgen einen Freund.
Alex along-brings tomorrow a friend

4.3.1.2 *Vorfeld* placement

In a number of German clause types, including declarative main clauses, the fronted verb is preceded by a constituent. This constituent appears in the so-called *Vorfeld* ‘prefield’. Frey (2006) argues that there are three ways that a constituent can end up in the *Vorfeld*.

1. *Formal movement*: The *Vorfeld*-constituent has the same intonational and pragmatic properties that it would have at the beginning of a V-final clause. This covers pragmatically unmarked subjects, including expletives as in (11a) and (11b), as well as aboutness topics. Formal movement is clause-bounded.
2. *Base generation*: This option is available for a small number of adverbials only. The *Vorfeld-es* in (11c) probably falls into this class.
3. \bar{A} -*movement*: The *Vorfeld*-constituent is moved from one of a variety of positions. This movement is potentially unbounded. The moved constituent is stressed and receives a contrastive interpretation.

The *Vorfeld*-constituent can be of any syntactic category and grammatical function. Examples (11a) and (11b) illustrate that it can also be an expletive, i.e. it need not make an independent semantic contribution. Even the *Vorfeld-es*, an expletive that is not even a dependent of the clause, is allowed, see (11c) from Müller (2013a: 174).

- (11) a. Es hat geregnet.
it has rained
 ‘It rained.’
- b. Es scheint, dass Alex schläft.
it seems that Alex sleeps
- c. i. Es kamen drei Männer herein.
it came three men in
 ‘Three men came in.’
- ii. dass (*es) drei Männer herein-kamen
that (it) three men in-came

Fanselow (2004) argues that German allows for what he calls *pars-pro-toto* movement, where only part of a contrastively interpreted constituent is moved into the *Vorfeld*. He provides the example in (12) Fanselow (2004: 12) and argues that the question can equally well be answered by (12a) or (12b). In either case, the focus is on both the dative object and the verb, even though in (12a) it is only the dative object that occurs in the *Vorfeld*.

- (12) Was ist mit dem Buch passiert? ‘What happened to the book?’
- a. Meiner FREUNDIN hab ich ’s geschenkt.
my.DAT girlfriend have I it given
 ‘I gave it to my girlfriend as a present.’
- b. [*Meiner Freundin geschenkt*] hab ich’s.

4.3.1.3 Passive

Just like V2-movement and *Vorfeld*-placement, passivization has no effect on the truth conditions of a sentence. In contrast to the previous two, however, the passive does not mark the clause type. In German, just as in English, verbs that take an accusative complement usually passivize. The complement becomes the subject, and the subject

becomes an optional oblique complement, see (13). In contrast to English, however, German also allows for the passivization of intransitive verbs, see (14a), and of verbs that take non-accusative complements, see (14b). All of these examples are taken from Müller (2013a: 287-288).

- (13) Karl öffnet das Fenster. → Das Fenster wird (von Karl) geöffnet.
Karl opens the window *the window is (by Karl) opened*
 ‘Karl is opening the window.’ ‘The window is being opened (by Karl).’

- (14) a. Hier wird getanzt.
 here is danced
 ‘People are dancing here.’
- b. Dem Mann wird geholfen.
 the.DAT man is helped
 ‘The man is being helped.’

In German, passivization is only possible for verbs that have a *referential* subject. Consequently, verbs with an *expletive* subject, see (15) from Müller (2013a: 293), or no subject at all, see (16) from Müller (2013a: 295), do not passivize.

- (15) * Heute wurde geregnet.
 today was rained

- (16) a. Dem Student graut vor der Prüfung.
 the.DAT student is.terrified of the.DAT exam
 ‘The student is terrified by the exam.’
- b. * Dem Student wird (vom Professor) vor der Prüfung gegraut.
 the.DAT student is (by.the professor) of the.DAT exam terrified

Müller (2013a: 289) provides the example in (17) to show that unaccusative verbs usually do not passivize.⁹

- (17) Der Zug kam an. → * Hier wurde angekommen.
the train came on here was arrived
 ‘The train arrived.’

Overall, we follow Müller (2013a) and describe the German passive as demotion of a referential subject.

4.3.2 English

We will now turn to parallel constructions in English and show that there are far stronger restrictions on fronted elements in English than in German. V2-like verb movement in English is restricted to auxiliaries. Since we do not know of any English SNDIs with an auxiliary, we will leave verb movement aside and focus on topicalization and passivization.¹⁰

⁹In those cases where unaccusative verbs do passivize, a special pragmatic effect is achieved. Müller (2013a: 305) illustrates this point with the example in (i), which can be used to express a generally valid rule.

- (i) Hier wird nicht an-gekommen, sondern nur ab-gefahren.
 here is not on-come but only away-driven
 ‘One doesn’t arrive here but only depart.’

This special pragmatic effect makes passivization possible in cases that otherwise seem completely out, such as with *haben* ‘have’:

- (ii) Hier wird keine Angst gehabt.
 here is no fear had
 ‘Nobody is afraid here.’ / ‘You’d better not be afraid!’

¹⁰Another potentially relevant construction is locative inversion, see (i). It involves a fronted non-subject and a verb that precedes the subject:

- (i) Beneath the chin lap of the helmet sprouted black whiskers. (Ward & Birner 1994: 7)

Just as for subject-auxiliary inversion, there are very strong restrictions on the type of verb that may occur in this construction. In addition, there are strong discourse requirements. Again, we did not find an SNDI that would be a candidate for this construction, which is why we will not take it into consideration here.

4.3.2.1 Topicalization

Topicalization is illustrated in (18) from Ward & Birner (1994: 5).

(18) GW: Have you finished the article yet?

MR: The conclusion I still have to do.

Ward & Birner (1994) argue that, in English, one of the requirements of topicalization is that the meaning of the fronted constituent be (linked to) discourse-old information.

Contrary to German, English also lacks *pars-pro-toto* fronting. The English equivalent of (12a) is not a felicitous answer to a question like *What happened to the book?* because the fronted constituent is not linked to the previous context and English does not allow to interpret the fronted constituent just as a “pars” to a larger “toto” that would include the verb.

(19) What happened to the book? # To my girlfriend, I gave it.

Yet another observation is important for our purpose. Reflexive pronouns can only be fronted if they are used contrastively, as in (20a). The reflexive complement of an inherently-reflexive predicate such as *perjure* cannot be used to mark a contrast. Consequently, it cannot be fronted, see (20b).

(20) a. Herself Alex watched in the mirror, not Chris.

b. * Herself Alex perjured.

We will interpret this as an indication that a topicalized constituent needs to make an independent contribution to the clause in which it is contained.¹¹

¹¹A reviewer points out that fronting reflexive arguments of inherently-reflexive verbs is highly restricted in German as well. A bare reflexive complement of an inherently-reflexive verb cannot occur in the *Vorfeld*, see (ia) from Müller (1999: 99-100), but if such a reflexive pronoun is contained in an argument-marking prepositional phrase, fronting is possible, see (ib), which is parallel to an example from Müller. There is consensus, shared also by Müller (1999: 387), that the contrast in (i) is due to a

4.3.2.2 Passivization

Susumu & Takami (2004: 127) argue that subjects of English passives are topics. Consequently, they need to be able to refer to entities in the discourse, ideally to entities that are either introduced in the previous discourse or can be inferred from it. Ward & Birner (2004) characterize passive subjects as being relatively discourse-old, i.e. at least not the discourse-newest element in the clause.

Kay et al. (ms) provide the examples in (21) to show that expletives can occur as subjects of passive sentences.

- (21) a. There was believed to be another worker at the site besides the neighbors who witnessed the incident.
- b. It was rumored that Great Britain, in apparent violation of the terms of the Clayton-Bulwer treaty, had taken possession of certain islands in the Bay of Honduras.

If expletives have an empty semantics, this would contradict the observations from Susumu & Takami (2004) and Ward & Birner (2004). Kay et al. (ms) do not provide any context, so we can only check on the observation from Ward & Birner (2004) that the subject is not the newest element in the sentence. We make the plausible assumption

prosodic constraint, namely that unstressable expressions cannot be moved to the *Vorfeld*. These do not only include bare inherently-reflexive pronouns but also accusative *es* ‘it’, see (ic).

- (i) a. * [NP: *Sich*] hat Peter geschämt.
 himself has Peter be.ashamed.of
 Intended: ‘Peter was ashamed of himself.’
- b. [PP: Mit *sich*] schleppt der junge Mann einen Korb ...
 with himself drags the young man a basket
 ‘The young man is dragging a basket ...’
<https://filmchecker.wordpress.com/2013/12/13/filmreview-basket-case-1982>.
 Accessed 2016-02-11.
- c. * Es haben die Kinder lesen müssen.
 it.ACC have the children read must
 Intended: ‘The children had to read it.’

that the expletive subject is co-indexed with a post-verbal constituent, namely the NP *another worker* in (21a) and the extraposed *that*-clause in (21b). Consequently, the expletive is at best as discourse-new as the post-verbal constituent, which satisfies the constraint.

4.4 Analysis

We will first provide the basic idea of our analysis and then show that it allows us to derive the syntactic flexibility of SNDIs in a natural way.

4.4.1 A redundancy-based semantic analysis

The picture that emerged from the discussion in 4.2 was that the difference in the syntactic encoding of SNDIs and semantically decomposable idioms is questionable. We will propose an encoding of SNDIs in terms of individual word-level lexical entries and, based on the discussion in 4.3, derive the restrictions on their syntactic flexibility from the interaction of this encoding with the language-specific properties of the relevant syntactic constructions. This is also the position taken in Kay et al. (ms), which, however, is exclusively based on English data.

There are at least two major challenges for any analysis of idioms in terms of individual word-level lexical entries. First, a mechanism is needed to ensure the co-occurrence of the idiom's components. We will call this the *collocational challenge*. Second, if the idiom's syntactic components combine according to the conventional rules of combinatorics, the idiom's semantics should equally emerge through the conventional mechanism of combinatorial semantics. We will call this the *compositional challenge*.

Any approach based on the insights of NSW has presented a solution to the collocational challenge. Within *Head-driven Phrase Structure Grammar*, for example, this is usually done by some sort of extended selectional mechanism (Krenn & Erbach 1994; Söhn & Sailer 2003; Sag 2007; Kay et al. ms), but more powerful collocational systems have also been used (Riehemann 2001; Sailer 2003; Söhn 2006). Common to all of these approaches is a proliferation of lexical entries. The word *kick*, for example, has lexical entries for its literal and for its idiomatic meanings. We will share this assumption and not elaborate on the collocational challenge any further – for such an elaboration, see, for example, the analysis of semantically decomposable idioms in Webelhuth et al. (2019).

What we will focus on here is the compositional challenge, which has played a major role in making the phrasal analysis of SNDIs so attractive. If there is no evidence that parts of an SNDI make an individual meaning contribution, why not just assign the idiom meaning to the phrase instead of its words? In light of the data on the syntactic flexibility of SNDIs, however, such an analysis is not easily tenable.

Kay et al. (ms) assign the entire meaning of an SNDI to its syntactic head. Such a suggestion is very natural within a head-driven syntax. To the other words within the idiom, Kay et al. (ms) assign an empty semantic contribution.¹² They achieve this by working within *Minimal Recursion Semantics* (Copestake et al. 1995 and Copestake et al. 2005), where semantic representations are encoded as lists of simple predicate-argument expressions and subordination constraints among these. An empty semantic contribution is simply encoded as an empty list.

This analysis is sketched in (22). We distinguish the idiom-internal *kick* from its literal homonym by representing the former as *kick_{id}*. We proceed analogously for

¹²The earliest reference to such an approach seems to be Ruhl (1975). Unfortunately, we could not get a copy of this paper. NSW explicitly reject this type of approach as failing to account for the syntactic fixedness of SNDIs.

the other words. The semantic representation of $kick_{id}$ consists of the predicate \mathbf{die}_{id} , a situation s , and the index of the subject: x .

(22) Semantic analysis of *kick the bucket* à la Kay et al. (ms)

a. $kick_{id}: \langle \mathbf{die}_{id}(s, x) \rangle$

b. $the_{id}: \langle \rangle$

c. $bucket_{id}: \langle \rangle$

Kay et al. (ms) derive the right semantics for the idiom and thereby solve the compositional challenge. They also account for the absence of an internal modification reading, as the noun $bucket_{id}$ does not make any semantic contribution that could be modified. The semantic emptiness of $bucket_{id}$ is also made responsible for the fact that topicalization is not possible with *kick the bucket*, as topicalization requires the topicalized constituent to be non-empty.

In light of the examples in (21), Kay et al. (ms) do not impose a non-emptiness constraint on passive subjects. Instead, they classify the idiomatic verb $kick_{id}$ as belonging to a verb class that does not allow for passivization.

While this analysis already goes a long way in what we consider the right direction, we think that a slightly different answer to the compositional challenge might get us even further. Instead of empty semantic contributions for the words $bucket_{id}$ and the_{id} , we assume *redundant* semantic contributions and make use of *Lexical Resource Semantics* (LRS, Richter & Sailer 2004). Within this framework, Richter & Sailer (2001, 2006) argue that the co-occurrence of words that contribute the same semantic operator (such as question or negation) is common in the languages of the world and, therefore, should be analyzed that way. Sailer (2010) extends this argument to lexical semantic contributions in his analysis of the English cognate object construction. The semantic contributions of signs used in these works are list-based, just as in Kay

et al. (ms). In contrast to Kay et al. (ms), however, the different lists may contain identical elements. Another difference is that the elements on the semantic contribution list need not be predicate-argument expressions but can be of any form.

Our analysis of *kick the bucket* is sketched in (23), where we indicate the lexical semantic contributions of the idiom's words.

(23) Redundancy-based semantic analysis of *kick the bucket*:

- a. $kick_{id}: \langle s, \mathbf{die}_{id}, \mathbf{die}_{id}(s, \alpha), \exists s(\beta) \rangle$
- b. $the_{id}: \langle s, \exists s(\beta) \rangle$
- c. $bucket_{id}: \langle s, \mathbf{die}_{id}, \mathbf{die}_{id}(s, \alpha) \rangle$

The verb $kick_{id}$ contributes a situation s , the predicate \mathbf{die}_{id} , and the formula that combines this predicate with its two arguments – one of them being the situation s . The second argument of \mathbf{die}_{id} is left underspecified, as its semantics will come from the subject. This underspecification is indicated with a lower-case Greek letter, here α , which is used as a meta-variable over expressions of our semantic representation language. The verb also contributes an existential quantification over the situational variable: $\exists s(\beta)$. The meta-variable β indicates that the scope of the quantifier is underspecified.

In other words, $kick_{id}$ contributes the same kinds of elements as other verbs. Similarly, the semantic contribution of the determiner the_{id} is just like that of a normal determiner. It contributes a variable and a quantification over this variable. The noun $bucket_{id}$, just like other common nouns, contributes a referential variable and a predicate.

While the semantic contributions of the idiomatic words in (23) are analogous to those of non-idiomatic words, it can be seen that the contributions of the_{id} and $bucket_{id}$ are contained in the contribution of $kick_{id}$.¹³ This is what we refer to as *redundant marking*.

¹³Technically, this effect can be achieved through selection. The selecting verb requires its complement to have the same index and to contribute the same constant: \mathbf{die}_{id} .

When words combine to form a phrase, their meaning contributions are collected, i.e. the list of semantic contributions of a phrase contains all the elements of its daughters' lists. For the sentence *Alex kicked_{id} the_{id} bucket_{id}*, the semantic contribution list will contain all the elements listed in (23) plus the contribution of the word *Alex*, which is just the constant **alex**.

At the sentence level, all the elements of this list must be combined into a single formula. To do this, each meta-variable must be assigned an element from the contribution list as its value. In our case, α would be assigned **alex**, which results in **die_{id}(s, alex)**. This formula is taken as the value of the meta-variable β . This leads to the intended semantic representation of the sentence: $\exists s(\mathbf{die}_{id}(s, \mathbf{alex}))$. The constant **die_{id}** occurs only once in this logical form, even though it is contributed by two words in the sentence – *kick_{id}* and *bucket_{id}*.

The redundancy-based analysis of *kick the bucket* will directly carry over to other SNDIS, be it in English or in other languages. In our case, the same semantic contributions would be assumed for the words in the German idiom *den Löffel abgeben* 'die'.

In the next two subsections, we will look more closely at the syntactic flexibility of SNDIS. We will show that the attested behavior follows directly from the interaction of the proposed analysis of SNDIS and the construction-specific constraints presented in 4.3. We will also show some advantages of the redundancy-based approach over the one of Kay et al. (ms).

4.4.2 Syntactic flexibility of German SNDIs

We will go through the three phenomena of German syntax discussed in 4.3.1 and look at them in the light of SNDIs.

4.4.2.1 German SNDIs and V2-movement

The restrictions on V2-movement are syntactic in nature and do not at all depend on the content of the verb. We hence expect that these constraints hold for the verbs in SNDIs. This is borne out. With *den Löffel abgeben*, for example, which contains a verb with the separable particle *ab*, a non-finite verb following the *Vorfeld* is ungrammatical, see (24b), and so is fronting the finite verb together with the particle, see (25b).¹⁴

- (24) a. Alex hat den Löffel ab-gegeben.
 Alex has the spoon on-passed
 b. **Alex ab-gegeben den Löffel hat.*

- (25) a. Alex gab den Löffel ab.
 Alex passed the spoon on
 ‘Alex died.’
 b. **Alex ab-gab den Löffel.*

¹⁴There are idioms where the verb must be in V2-position. Richter & Sailer (2009: 300) claim that the idiom in (i) has a fixed *Vorfeld* element followed by the finite form *tritt*. We think that this is due to the fact that this is an idiom with a “pragmatic point” (Fillmore et al. 1988) and, thus, a certain illocutionary force is part of the idiom, which is not compatible with a V-final clause.

- (i) a. Ich glaub, mich tritt ein Pferd!
 I believe me.ACC kicks a horse
 ‘I am very surprised.’ / ‘I can’t believe this!’
 b. # *Ich glaub, dass mich ein Pferd tritt.*

4.4.2.2 German SNDIs and *Vorfeld* placement

As we saw in 4.3.1.2, there are three possibilities for a constituent to be licensed in the *Vorfeld*: formal movement, base generation, and -movement for contrast. Fanselow (2004) provides examples of *Vorfeld* placement of constituents of SNDIs. One of his examples is given in (26) (from Fanselow (2004: 22), where the PP-constituent of the idiom *am Hungertuch nagen* ‘be very poor’ (lit.: ‘gnaw at the hunger cloth’) is fronted. The sentence has a contrastive interpretation; the alternatives are various degrees of poorness.

- (26) Am Hunger-tuch müssen wir noch nicht nagen.
on.the hunger-cloth must we yet not gnaw
 ‘We are not down on our uppers, yet.’

When we apply these considerations to *den Löffel abgeben*, we see that in an active sentence, fronting the NP *den Löffel* should be unproblematic under a contrastive reading.¹⁵ This is shown in (27), where the alternatives are other consequences of serious illness.

- (27) Es sind zwar viele schwer krank geworden, den Löffel hat aber noch
it are admittedly many heavy sick become, the spoon has but still
 niemand ab-gegeben.
nobody on-passed
 ‘Though many got seriously sick, nobody has died yet.’

¹⁵For the non-contrastive case, we find clause-initial placement of the *Löffel*-NP in V-final clauses, at least in the passive. This shows that the idiom-internal NP can be fronted by formal movement.

- (i) Da ist nichts mehr zu machen. ‘Nothing can be done anymore.’
 a. Es sieht so aus, also ob [der Löffel jetzt endgültig ab-gegeben ist].
it looks so out as if the spoon now definitively on-passed is
 ‘It looks like it is definitely over now.’
 b. Der Löffel ist jetzt endgültig ab-gegeben.
 ‘It is definitely over now.’

These contrastive cases clearly distinguish between our analysis and that of Kay et al. (ms). Since the NP *den Löffel* contributes the same situational variable as the verb *abgeben*, it is easy to know to which larger “toto” the fronted “pars” belongs. In an analysis with an empty semantics of the NP, this would not be possible.

4.4.2.3 German SNDIs and the passive

We expect the passivizability of SNDIs to follow from the interaction between the above analysis and the general properties of the German passive discussed in 4.3.1. The German passive voice demotes the subject of an active clause. In our analysis, a passive verb requires that there be a participant filling the thematic role of the active subject and that this subject have a non-redundant index.¹⁶ There are additional restrictions on verbs that cannot be passivized or only with the special pragmatic effect mentioned in Footnote 9.

Dobrovol’skij (2000) argues that a VP-idiom, semantically decomposable or not, can never be passivized if the literal counterpart of the idiom’s verb cannot be passivized. His example is the semantically decomposable idiom *einen Korb bekommen* ‘get the brush-off’ (lit.: ‘receive a basket’), which can neither be passivized in its literal nor in its idiomatic reading.

Idioms with an expletive subject do not passivize either. An example is *Bindfäden regnen* ‘rain heavily’ (lit.: ‘rain strings’), see (28).

(28) * Hier werden/wird Bindfäden geregnet.
here are/is strings rained

¹⁶A bit more technically, the index of the active subject must not be identical with the index of the active verb or any of the verb’s arguments. This restriction does not seem to be valid for German only, but can be used to derive the ungrammaticality of **Alex_i was shaved by himself_i*. A reviewer pointed out that a reflexive pronoun is possible in a *by*-phrase in a context that evokes alternatives to the reflexive pronoun, such as *Chris was shaved by Alex and Alex was shaved by himself*. This exception is clearly connected to a special semantics to which our non-redundant index requirement would need to be adapted.

This is expected under our analysis. The LRS analysis of expletives is redundancy-based. For weather verbs, Levine et al. (prep) assume that the expletive subject has the same index as the verb. Consequently, the sentence in (28) violates the constraint that the demoted subject must not have a redundant index.

A reviewer brought the example in (29a) to our attention. Müller (2002: 131) points out that if (29b) is the active counterpart of (29a), one is forced to allow the weather-*es* to be the underlying subject of a passive. This might undermine the explanation for blocking (28).

- (29) a. Die Stühle wurden nass geregnet.
 the chairs were wet rained
 ‘The rain caused the chairs to become wet.’
- b. Es hat die Stühle nass geregnet.
 it has the chairs wet rained

Our semantic-based constraint on passivization does not run into this problem. We give a very rough sketch of the logical form of (29) in (30). This formula can be paraphrased as in the following sentence. There are the eventualities s , s' , and s'' , such that s is a raining event, s' is a state with wet chairs, and s'' is a causation event in which the raining s causes the wetness s' .

$$(30) \exists s \exists s' \exists s'' (\mathbf{rain}(s) \wedge \mathbf{wet}(s', \mathbf{the-chairs}) \wedge \mathbf{cause}(s'', s, s'))$$

Following the syntactic analysis in Müller (2002: 241), the resultative version of *regnen* comes about by a lexical rule that changes the verb’s valence requirement and adds the semantic material required for the causation/result semantics. When one adapts this rule to LRS, it also changes the index of the verb from the raining event to the causation event. Consequently, resultative *regnen* in (29) has the index s'' in (30), whereas the raining – and, by redundancy, the expletive *es* – has the index s . Since the underlying

active subject and the passivized verb have distinct indices under this analysis, the grammaticality of (29a) is predicted. Note that this analysis, again, is possible under a redundancy analysis of expletives but hard to implement if one assumes an empty semantics for expletives.

As for verbs allowing for passivization, Dobrovol'skij (2000: 561) distinguishes between idioms with idiom-external accusative objects, as in (31), and those with idiom-internal accusatives, as in his example in (32). For the former, there is no idiom-specific restriction on passivization.

(31) *etwas auf Eis legen* 'put something on hold'

Das Projekt wurde auf Eis gelegt.
the project was on ice put

'The project was put on hold.'

(32) *jemandem den Garaus machen* 'kill someone'

... den lästigen Hausgenossen soll nun ... der Garaus gemacht
the.DAT annoying housemates should now the.NOM Garaus made
 werden ...
be

'... the annoying housemates should now be killed ...'

Dobrovol'skij (2000) assumes that the main function of the German passive is to promote an accusative complement. This promotion has the syntactic effect of realizing the underlying accusative complement as a subject and the semantic/pragmatic effect of assigning its referent the status of a topic. Based on these assumptions, he diagnoses a syntax-semantics mismatch in sentences like (32). Syntactically, he says, the idiom-internal NP is promoted, but semantically it is the idiom-external dative NP. In a subject-demotion approach, no such mismatch needs to be assumed for (32).

We can derive the topicality of the dative NP from the fact that it occurs in a topic position – here, its appearance in the *Vorfeld* through formal movement (see 4.3.1.2).

Dobrovol'skij (2000) only considers passives of transitive verbs with an agentive meaning. Our approach does not have this limitation. We expect the passive to be possible with idioms having a non-agentive idiomatic meaning, such as *den Löffel abgeben*, for which we can indeed find examples, see (33).

- (33) Bei den Grünen wird der politische Löffel schon vor Amtsabschied
at the Green.party is the political spoon already before resigning
 ab-gegeben.
on-passed

‘In the Green Party, people die politically already before resigning from their office.’¹⁷

In this section, we argued that the restrictions on three syntactic processes of German (V2-movement, fronting, and passivization) are very weak and compatible with the syntactic, semantic, and pragmatic properties of an SNDI such as *den Löffel abgeben*. We therefore expect that the idiom can occur in all of them.

4.4.3 Syntactic flexibility of English SNDIs

We saw in 4.3.2 that English imposes semantic constraints on frontable constituents and on passive subjects. We will now explore the interaction of these constraints with our lexical encoding of SNDIs.

For topicalization, we saw in 4.3.2 that the topicalized constituent must be explicitly linked to the previous discourse, and that it must make an independent semantic contribution within its clause. In LRS, such a non-redundancy requirement can be expressed easily by saying that the semantic contribution of the topicalized constituent

¹⁷<http://www.kontextwochenzeitung.de/politik/148/erst-schreien-wenn-etwas-geschafft-ist-1992.html>. Accessed 2014-12-19.

must not be properly included in the semantic contribution of the rest of the clause. In our analysis, the meaning of the NP *the bucket* is fully included in the meaning of the rest of the clause. Therefore, the ban on topicalization follows directly.

Matters are slightly more complicated when we look at the passive voice. The constraints on a passive subject have been shown to be weaker than those on a topicalized constituent. We saw above that a passive subject must refer to something that has been mentioned earlier in the discourse (or that can be inferred from such an element). This does not exclude the possibility of the subject making a semantic contribution that is contained in that of the rest of the sentence – as we saw in the cases of expletive passive subjects in (21).

Consequently, if the discourse conditions on passive subjects are met, even English SNDIs can be passivized. In (7), repeated in (34), *kick the bucket* is topical, only the tense and the result state are new.

(34) When you are dead, you don't have to worry about death anymore. . . .
The bucket will be kicked.

The example in (34) is one out of admittedly few naturally occurring examples of the passive with this idiom.¹⁸ The following examples show passives for other idioms that are classified as IPs in NSW, see (35), or do not pass the tests for semantic decomposability, see (36). Example (36) shows particularly clearly that the meaning of the idiom *have a cow* is discourse-old, as it is explicitly mentioned in the preceding clause.¹⁹

¹⁸In a recent talk, Christiane Fellbaum presented two other naturally occurring examples of *kick-the-bucket* passives and passives of other English idioms that express the idea of “dying”. In as far as context is included in her examples, they also satisfy the topicality requirement. See: <http://www.crisp.be/wp-content/uploads/2015/04/Talk7-Fellbaum.pdf>. Accessed 2015-08-27.

¹⁹Note that even though the examples in (35) and (36) may have a playful character, they do not blend the idiomatic and the non-idiomatic reading, as it would typically be the case in jokes or puns.

(35) *saw logs* ‘snore’

I excitedly yet partially delusional turned to Alexandria to point out the sun as it set and all I see is eyelids and hear *logs being sawed*. Come on! I can’t say too much because I wasn’t far behind as I was catching flies [= sleeping] about a minute later.²⁰

(36) *have a cow* ‘get angry’

There was really no need for the police to have a cow, but *a cow was had*, resulting in kettling, CS gas and 182 arrests.²¹

An approach that assumes an empty semantics for the idiom-internal NP *the bucket* runs into severe problems. We saw above that passivization is possible for SNDIs if the strong discourse requirements are met. Thus, it would be wrong to categorically block the passivization of *kick_{id}*. Our approach correctly predicts the admittedly rare occurrence of passives with this idiom. Furthermore, an empty semantics for *the bucket* does not allow us to relate the NP’s meaning to the preceding discourse. A redundancy-based account makes the required semantic information available at the clause-initial constituent.

Let us conclude 4.4 with a brief summary of our analysis. We replaced NSW’s causal relation between the semantic decomposability and the syntactic flexibility of idioms with an approach based on the interaction of the properties of idioms with the constraints on syntactic constructions. While, overall, our account is very similar to Kay et al. (ms), an important difference is that we make use of redundant marking, a choice which we hope to have motivated above.

²⁰<http://5050experience.sportsblog.com/posts/1125677/feast.html>. Accessed 2015-07-24.

²¹<http://www.theguardian.com/commentisfree/2012/aug/01/cyclists-like-pedestrians-must-get-angry>. Accessed 2015-08-24.

4.5 Extension to other languages

So far, we have only looked at English and German. These two closely-related languages already show considerable differences in their syntactic constructions, and these differences have far-reaching consequences for the flexibility of MWEs. In this section, we would like to briefly show that other languages have yet other constraints on similar syntactic operations and that these have a predictable effect on the flexibility of idioms.

4.5.1 Estonian

Muischnek & Kaalep (2010) name and describe a number of problems in applying an English-based classification of idioms to Estonian. Similar to German, Estonian allows for considerably more word-order flexibility than English. Muischnek & Kaalep (2010: 122) argue that Estonian has a passive-like construction whose function is to background a (usually human) subject, rather than to foreground an object. This is similar to the function of the passive in German. Consequently, passivizing intransitive verbs is possible, see (37).

(37)	<i>Mees jookseb</i>	→	<i>Joostakse</i>
	man run.PRESENT		run.IMPERS
	‘The man is running.’		‘Somebody is running.’

In order to emphasize its subject-backgrounding function, this construction is called *impersonal passive*. In contrast to German, there is no change in the morphological case of the active direct object, see (38). This leads us to expect that the lack of object foregrounding might be even stronger in Estonian than in German.²²

²²The differences between German passives and Estonian impersonal passives are discussed in detail in Blevins (2003).

We will leave the details of the passivizability of intransitive verbs in French aside. Gaatone (1993) gives examples of passivized French SNDIs, including the one in (41) (see Gaatone 1993: 47).²⁴

(41) *porter la culotte* ‘wear the pants’

Mme et M. Armand y règnent paternellement, bien que la culotte
Mrs and Mr Armand there rule paternally even though the pants
 y soit portée par madame . . .
there is worn by madam

‘Mrs and Mr Armand rule there paternally even though she is the dominant part’

In this section, we showed that our results of the German-English contrast carry over to other languages as well. Whether or not an SNDI can appear in a certain syntactic construction is dependent on the constraints on that construction in the particular language. Languages may differ significantly with regard to these constraints. For this reason, classical tests for classifying idioms, such as passivizability and fronting, cannot be easily applied across languages but need to be re-examined in each individual case.

4.6 Conclusion

Wasow et al. (1983) and Nunberg et al. (1994) have led to a shift in perspective from a monolithic, fully phrasal view of all idioms to a more lexical approach for semantically decomposable idioms. We agree with Kay et al. (ms) in extending this lexical approach to SNDIs.²⁵ In order to provide a solid motivation for this step, it is essential to look at a larger set of languages, in particular languages that differ in the semantic and pragmatic

²⁴The English counterpart *wear the pants* syntactically behaves like *kick the bucket*. The corresponding German expression *die Hosen an-haben* (lit.: ‘have the pants on’) cannot be passivized since the verb *haben* ‘have’ is unpassivizable in general.

²⁵Parallel treatments of SNDIs and semantically decomposable idioms have recently been proposed within other frameworks as well; see a short remark in Harley & Stone (2013: fn. 2) within a Minimalist approach and Lichte & Kallmeyer (2016) for Tree Adjoining Grammar.

properties of morphosyntactically similar constructions. The present paper made a first step in that direction and looked at verb fronting, topicalization, and passivization in German and English as well as the impersonal passive in Estonian and the passive in French. Whereas Nunberg et al. (1994) are forced to analyze English and German SNDIs in considerably different ways, the lexical analysis presented here provides a cross-linguistically uniform analysis.²⁶

This type of analysis has consequences for the encoding of multiword expressions (MWE) in formal grammar in general. All MWEs that are of syntactically regular shape should receive a lexical encoding. The difference between semantically decomposable and semantically non-decomposable MWEs lies in the way in which the semantics of the MWE is distributed over the words constituting the MWE. Whereas the parts of a semantically decomposable MWE have an independent, i.e. non-redundant, meaning, the parts of a semantically non-decomposable MWE do not. Differences in the syntactic flexibility of semantically decomposable and semantically non-decomposable MWEs follow exclusively from the interaction between the language-specific constraints on a syntactic operation and the semantics of the MWE's constituents.

²⁶We side with Müller (2013b: 923), who states: “If we can choose between several theoretical approaches, . . . we should take the one that can capture cross-linguistic generalizations.”

Chapter 5

Modification of literal meanings in semantically non-decomposable idioms

Bargmann, Gehrke, and Richter (2021)[§]

5.1 Introduction

In any comprehensive investigation of one-to-many relations between form and meaning, there is no way around idioms. In nearly all cases, the string that can be interpreted as an idiom (e.g. *pull x's leg* \rightsquigarrow_{id} ‘playfully deceive *x*’) can also be interpreted literally (*pull x's leg* \rightarrow_{lit} ‘pull *x*’s leg’), so that one and the same string provides several meanings. This becomes especially obvious in so-called conjunction modification (Ernst 1981), in which a modifier inserted into the nominal complement of a verb-phrase idiom modifies the literal meaning of the noun, while the idiom as a whole is still understood in its idiomatic meaning (*pull x's tattooed leg* \rightsquigarrow_{id} ‘playfully deceive *x*’ and \rightarrow_{lit} ‘*x* has a tattooed leg’).¹ The perceived interpretation of the resulting expression

[§]This chapter has also been published in B. Crysmann and M. Sailer (Eds.), *One-to-Many Relations in Morphology, Syntax, and Semantics*. Berlin: Language Science Press. My contribution to it mainly consists in but is in no way limited to Section 5.2 “Ernst’s tripartite division of idiom modification” and the conjunction modification analyses in the following sections: Section 5.3.3 “Corpus examples of conjunction modification”, Section 5.3.4 “Complex conjunction modification examples”, Section 5.3.5 “Controversial cases”, and Section 5.4 “Beyond modification”.

¹Here and in the following, we italicize those words that belong to the idiom, underline the modifier(s), and put single quotation marks around the meaning representations, which we state informally

requires both the idiomatic meaning of the idiom and the literal meaning of the idiom's noun.

Overall, Ernst (1981) distinguishes three types of modification in what he calls “extraneous” modifiers in idioms (i.e. modifiers that are not part of the idiom itself): internal modification, external modification, and conjunction modification.² The aim of this paper is to explain this tripartite division of idiom modification and then to focus on conjunction modification and corpus examples that fall into this category. As our discussion will show (and as Ernst 1981 already emphasizes as well), it is not always uncontroversial, however, which one(s) of the three categories of idiom modification a specific example falls into. Such complications might ultimately lead to a revision of Ernst's characterizations of the three classes or to a different theory of idiom modification altogether. With our present discussion, we want to contribute to a better understanding of the empirical situation as a necessary foundation to such a revised theory.

The paper is structured as follows. First, we will give a short introduction to Ernst's tripartite division of idiom modification (Section 5.2). We will then zoom in on conjunction modification and present corpus data of two English and two German semantically non-decomposable verb phrase idioms with the meaning ‘die’ (*kick the bucket*, *bite the dust*, *den Löffel abgeben* ‘(lit.) pass on the spoon’, and *ins Gras beißen* ‘(lit.) bite into the grass’) that include an extra modifier. Their analysis will not always be unanimous (Section 5.3). Before we conclude our paper (Section 5.5), we will point to some idiom examples beyond modification that nonetheless seem to be analyzable in a similar way as conjunction modification (Section 5.4).

by means of natural language (English) expressions.

²As far as we know and as Stathi (2007: 83) states as well, Ernst (1981) is the first to systematically look into modification in idioms. Since our purpose is mainly to study naturally occurring data, rather than to provide a complete account, we will not discuss other, more recent papers on modification (see, for instance, Stathi 2007; Cserép 2010; McClure 2011; Sailer 2017).

Our discussion of semantic interpretation will remain mostly nontechnical, although we have a suitably expressive logical language in mind for semantic representations when we explicate the meaning of our examples in English paraphrases. How these representations are to be built from the representations of words, or how the representations of larger semantically non-decomposable idioms enter the semantic composition mechanism, is an important question, but it is not the focus of the present discussion. Only in light of an explicit system that answers these questions and governs a precise semantic composition mechanism could we make sense of issues concerning compositionality, which are regularly and naturally raised in connection with the analysis of idioms.

When we use the term *compositionality* here, it is meant as a broad reference to a semantic composition operation that starts from simple or phrasal lexical units (the latter being possibly necessary for semantically non-decomposable idioms) and constructs the representations of larger units from them, conditional on syntactic structure. When we say for some examples, following common parlance, that we do not know how to analyze them compositionally, this means that we are unsure how to spell out a composition operation in this sense in full detail. It is not to be understood as a technical statement about the relationship between the syntax and semantic composition mechanism(s) of the grammar framework of choice in which the operation would have to be expressed.³

³Two authors of the present paper have a preference for a constraint-based semantics in HPSG for which compositionality in the traditional sense does not hold, although it formulates a precise *systematic* relationship between syntactic structure and semantic interpretation.

5.2 Ernst's tripartite division of idiom modification

According to Ernst (1981), modification in idioms is – at least in principle – three-way ambiguous between external modification, internal modification, and conjunction modification. Context and world knowledge narrow down the interpretative options that the semantics provides on the basis of the combination of the meaning of the modifier and the meaning of the idiom.

If an idiom has *internal semantic structure* in the sense that its “particular words [...] correspond to specific independent elements in the idiom’s semantic representation” (Ernst 1981: 67), as in *pull strings* (\rightsquigarrow_{id} ‘use connections’) or *jump on the bandwagon* (\rightsquigarrow_{id} ‘join a movement’), the idiom allows for all three modification options. Following Nunberg et al. (1994), we call such idioms *semantically decomposable*. If, in contrast, the idiom has no internal semantic structure, as in *kick the bucket* (\rightsquigarrow_{id} ‘die’) or *tighten one’s belt* (\rightsquigarrow_{id} ‘economize’), internal modification is impossible. These idioms we call *semantically non-decomposable*.⁴

5.2.1 Internal modification

In internal modification, the literal or figurative meaning of the modifier applies to the idiomatic meaning of the idiom’s noun, see (1), Ernst’s (8).

- (1) In spite of its conservatism, many people were eager to *jump on the horse-drawn Reagan bandwagon*.

⁴It is important to note at this point that the decomposability of an idiom cannot be proven by simply finding a paraphrase for the idiom in which each word corresponds to exactly one of the words of the idiom. In order to show that an idiom is semantically decomposable, i.e. that the idiom’s meaning disseminates over its words in such a way that each of these words receives a meaning component of the overall meaning of the idiom, it must pass tests like semantic modification of the idiomatic meaning of its nominal part (= Ernst’s internal modification), quantifier variation in the idiomatic meaning of its nominal part, and/or anaphoric references to the idiomatic meaning of its nominal part; see Nunberg et al. (1994).

If you jump on the bandwagon in the idiomatic sense, you join a growing movement (in an opportunistic way or simply for the excitement) once that movement is perceived to be successful.⁵ This is directly reflected in Ernst's decomposition of the idiom into two parts and his assumption that the literal and the idiomatic meaning of each part are linked: 'jump on' is linked to 'join', and 'bandwagon' is linked to 'movement'.

In the sentence in (1), there are two modifiers within *jump on the bandwagon*: Reagan and horse-drawn.⁶ Together with these modifiers, Ernst argues, the idiom expresses something like 'join the old-fashioned Reagan campaign', i.e. Reagan and horse-drawn modify the noun *bandwagon* on its idiomatic reading, not only syntactically but also semantically. More precisely, the figurative meaning of the modifier horse-drawn (\rightsquigarrow_{inf} 'old-fashioned' or 'behind the times', at least in relation to *bandwagon*) modifies the meaning of the nominal *Reagan bandwagon*, in which the literal meaning of the modifier Reagan (\rightarrow_{lit} 'Reagan') modifies the idiomatic meaning of the noun *bandwagon* (\rightsquigarrow_{id} 'movement').

To conclude, in internal modification, modifiers do not only have the form and position (= morphosyntactic characteristics) of prenominal modifiers but also behave like them semantically, as they characterize the meaning of the following nominal. While the noun itself is interpreted in its idiomatic meaning, the interpretation of the modifiers can be literal (as with Reagan) or figurative (as with horse-drawn).

5.2.2 External modification

In external modification, the literal or figurative meaning of the modifier applies to the idiomatic meaning of the idiom as a whole and functions like a domain adverb, see (2),

⁵Variations of this idiom are *hop on the bandwagon* and *climb on the bandwagon*. All of them allude to literally jumping/hopping/climbing on the wagon that used to carry (and sometimes still does) the band and the candidate during a political campaign.

⁶Note, however, that Ernst (1981) focuses on the modifier horse-drawn only.

taken from Ernst (1981: 51).

(2) With that dumb remark at the party last night, I really *kicked the social bucket*.

If you kick the bucket in the idiomatic sense, you die. Nothing is said about a bucket or kicking. In (2), we again have a modifier in the idiom: social. In contrast to the situation in (1), however, it is not the case that the modifier modifies the idiomatic meaning of the idiom's noun. Instead, *I kicked the social bucket* means that the speaker did the "bucket-kicking" in the social domain, i.e. she did not die physiologically (if she had, she would not have been able to report that) but only socially. It is not the meaning of the idiom's noun but the meaning of the entire idiom that is modified. Truth-conditionally, the meaning of the sentence in (2) seems to be indistinguishable from the meaning of the sentence in (3):

(3) Socially, I really *kicked the bucket* with that dumb remark at the party last night.

As the modifier in external modification specifies the domain within which the meaning of the idiom applies, Ernst calls external modifiers *domain delimiters*. Typical domain delimiters are adjectives belonging to professional or academic domains, like *political*, *economic*, *musical*, etc. However, there are also non-typical domain-delimiting modifiers that can nonetheless function as domain delimiters in certain contexts, see (4), Ernst's (24).

(4) He denied that the Saudis, angry over [the movie] *Death of a Princess*, were *seeking some celluloid revenge* with a movie of their own.

In this example, "celluloid is being used figuratively, and is more or less equivalent to the literal cinematic" (Ernst 1981: 55). From examples like these Ernst concludes that external modification is not restricted to one particular lexical class of adjectives.

5.2.3 Conjunction modification

In conjunction modification, the last of Ernst's three types of idiom modification and our central topic in this paper, the meaning of the modifier applies to the meaning of the idiom's noun, just like in internal modification. In contrast to internal modification, however, Ernst argues, the modifier does not apply to the idiomatic meaning of the noun but to its literal meaning, and this happens in an additional proposition that is independent of the proposition that expresses the meaning of the idiom. Conjunction modification is exemplified in (5), Ernst's (10), taken from a review of a production of the Shakespearean play *Twelfth Night*:

- (5) Malvolio deserves almost everything he gets, but ... there is that little stab of shame we feel at the end for having had such fun *pulling* his cross-gartered leg for so long.

If you pull someone's leg in the idiomatic sense, you playfully deceive that person. It need not, and usually does not, have anything to do with that person's leg(s). However, the insertion of the modifier cross-gartered, as in (5), suddenly leads to an interpretation that includes the proposition that Malvolio has a cross-gartered leg, a proposition that is entirely independent of the meaning of the idiom. For reasons of clarity, let us look at a simplified version of (5), namely (6):

- (6) We *pulled* Malvolio's cross-gartered leg.

According to Ernst, this sentence expresses the conjunction of two independent propositions. Here and in the following, we will spell his analysis out in detail and use the representation format shown in (7) to do so.⁷

⁷In our representations and explanations of the conjunction modification analyses, in contrast to our representations and explanations of the natural language examples, we italicize not just the words that belong to the idiom but all words, including the modifier. Moreover, and more importantly, we strike out those words that are not semantically interpreted at a particular instance (in contrast to the Minimalist

(7) Conjunction modification analysis of (6):

s_1 : *We pulled Malvolio's ~~cross-gartered~~ leg.*

\rightsquigarrow_{id} p_1 : 'We playfully deceived Malvolio.'

s_2 : ~~*We pulled Malvolio's cross-gartered leg.*~~

\rightarrow_{lit} p_2 : 'Malvolio has a cross-gartered leg.'

p_1 & p_2 : 'We playfully deceived Malvolio, who has a cross-gartered leg.'

The analysis in (7) expresses that the proposition p_1 ('We playfully deceived Malvolio.') represents the idiomatic meaning (\rightsquigarrow_{id}) of the string s_1 (*We pulled Malvolio's leg.*), which is the sentence in (6) without the modifier *cross-gartered*. Without that modifier, s_1 says nothing about Malvolio's leg. The proposition p_2 ('Malvolio has a cross-gartered leg.'), in contrast, is the non-idiomatic and non-figurative (hence \rightarrow_{lit}) meaning of the string s_2 (*Malvolio's cross-gartered leg* – the NP-complement of the verb in (6)) and hence does say something about Malvolio's leg, namely that it is cross-gartered. The two independent propositions p_1 and p_2 are then conjoined into p_1 & p_2 : 'We playfully deceived Malvolio, and Malvolio has a cross-gartered leg.' Alternatively, and expressed more naturally: 'We playfully deceived Malvolio, who has a cross-gartered leg.'

On top of cases like the one we have just dealt with, Ernst also points to cases in which p_2 is figuratively reinterpreted, see (8), Ernst's (40).

(8) With the recession, oil companies are having to *tighten* their Gucci belts.

If you have to tighten your belt in the idiomatic sense, you have to economize. Let us once again simplify the example:

notation, in which strikeout usually represents the deletion of phonological material while keeping that material's meaning). It is important to note here that s_1 and s_2 are, in fact, one and the same string with different parts of that same string being semantically interpreted in s_1 and s_2 . For reasons of simplicity, however, we will talk about them as if they were two different strings.

(9) Oil companies have to *tighten* their Gucci belts.

Just like “We *pulled* Malvolio’s cross-gartered leg.” in (6), the sentence in (9) expresses the conjunction of two propositions of which the first is idiomatic, whereas the second is non-idiomatic and independent of the first. In contrast to (6), however, the second proposition expressed by (9) is the result of a figurative reinterpretation (subsumed under \rightsquigarrow_{inf} in this paper):⁸

(10) Conjunction modification analysis of (9):

s_1 : *Oil companies_i have to tighten their_i ~~Gucci~~ belts.*
 \rightsquigarrow_{id} p_1 : ‘Oil companies have to economize.’

s_2 : ~~*Oil companies_i have to tighten their_i Gucci belts.*~~
 \rightarrow_{lit} p_2 : ‘Oil companies have Gucci belts.’
 \rightsquigarrow_{inf} p_2' : ‘Oil companies are rich.’

p_1 & p_2' : ‘Oil companies have to economize, and they are rich.’

The proposition p_1 (‘Oil companies have to economize.’) is the idiomatic meaning (\rightsquigarrow_{id}) of the string s_1 (*Oil companies_i have to tighten their_i belts.*), which is the sentence in (9) without the modifier *Gucci*. The proposition p_2' (‘Oil companies are rich.’), in contrast, is a figurative reinterpretation of the intermediate proposition p_2 (‘Oil companies have Gucci belts.’), which expresses a possessive relation between oil companies (= the possessors) and belts by the luxury brand Gucci (= the possessions), which are symbols of great wealth. This intermediate proposition represents the non-idiomatic and non-figurative (hence \rightarrow_{lit}) meaning of s_2 (*their_i Gucci belts*), which is the NP-complement of the verb in (9), in which the reference of the possessive determiner *their_i*

⁸Here and in the following, we will use the arrow \rightsquigarrow_{inf} whenever a figurative reinterpretation is at play or any other kind of inference needs to be drawn from the literal meaning by taking into account the overall context and/or world knowledge. Note that in a non-figurative inference, the literal meaning that the inference is based on continues to hold, whereas in a figurative reinterpretation, it does not.

has already been resolved, so that *their_i Gucci belts* is identical in meaning to *oil companies' Gucci belts*. The two independent propositions p_1 and p_2' are then conjoined into 'Oil companies have to economize, and oil companies are rich.' More naturally: 'Oil companies have to economize, and they are rich.' So, neither p_1 nor p_2' nor their conjunction says anything about belts or Gucci or Gucci belts, and there is no literal possession of such belts by oil companies.

However, whereas the meaning components of a literal or idiomatic meaning can simply be retrieved from the lexicon, i.e. accessed directly, a figurative interpretation (in (10): 'Oil companies are rich.') is always based on, and hence a reinterpretation of, a literal meaning (in (10): 'Oil companies have Gucci belts.'). Consequently, at one point within the analysis of (9), the literal meaning of the idiom's noun *belts* and the literal meaning of the modifier *Gucci* actually do play a role, just like the literal meaning of the idiom's noun *leg* and the literal meaning of the modifier *cross-gartered* do in the analysis of (6), whose interpretation process does not contain any figurative steps. One of the reasons why a proposition is reinterpreted figuratively can be that its literal meaning does not make much sense, which is the case in (10), as oil companies do not usually have belts.⁹

5.3 Zooming in on conjunction modification

Before we go into our corpus examples and their analysis in the spirit of Ernst's (1981) conjunction modification (see Section 5.3.3 to Section 5.3.5), let us delineate our general take on conjunction modification (see Section 5.3.1) and present the four semantically non-decomposable idioms to be studied (see Section 5.3.2).

⁹However, even if we were talking about people instead of companies, it would not be necessary that those people have (literally possess) Gucci belts, and a figurative reinterpretation would still be possible.

5.3.1 Our take on conjunction modification

First, we perceive conjunction modification and the modification of literal and idiomatic meanings within idioms in general to be well within the scope of a grammatical theory of idioms. Sometimes these phenomena have been denied this status, being discarded as ‘word play’.¹⁰ Even if conjunction modification were to fall within ‘word play’ (however we define it), it would still involve language and thus should be analyzable.

Second, if conjunction modification, as Ernst claims, adds an independent proposition, it should be a non-restrictive kind of noun modification. Restrictive modification, e.g. in the combination of adjective (A) and noun (N), involves intersecting (or, with subsecutive As, narrowing down) the set of entities with the property N with the set of entities with the property A (or to the set of entities that have both the A and the N properties) (e.g. *black elephants* have both the black property and the elephant property, or are a subset of *elephants*) and therefore the A denotes a property (see, e.g., Kamp & Partee 1995). Non-restrictive modification, on the other hand, adds a secondary proposition that does not narrow down the nominal property and the role it plays in the primary proposition; therefore the content of the secondary proposition is often analyzed as being outside the main assertion of the first proposition (see, e.g., Morzycki 2015; McNally 2016 and literature cited therein). Propositions, in contrast to properties (predicates) expressed by adjectives or restrictive relative clauses, cannot modify an N restrictively.

Third, we would like to emphasize, just like Ernst does, that semantically non-decomposable idioms only allow for conjunction modification and external modification, as internal modification requires access to an idiomatic meaning of the idiom’s

¹⁰See, for instance, Schenk (1995) or Nicolas (1995), who claim that any modification of idioms is either (i) external modification or (ii) statistically negligible and outside the scope of a grammatical theory of idioms, which for them are always non-decomposable units.

noun, which semantically non-decomposable idioms cannot provide. Therefore, if Ernst's hypothesis is correct that modifiers in idioms are in principle three-way ambiguous, focusing on semantically non-decomposable idioms in the empirical investigation removes one level of ambiguity. For this reason, we restrict our attention in the following to semantically non-decomposable idioms.

5.3.2 Our four idioms

We chose two English and two German semantically non-decomposable idioms with the meaning 'die', see (11) for the English and (12) for the German idioms.

(11) a. kick the bucket

b. bite the dust

(12) a. den Löffel abgeben
the.ACC spoon on.pass
 '(lit.) pass on the spoon'

b. ins Gras beißen
in.the.ACC grass bite
 '(lit.) bite into the grass'

We searched for occurrences of these four idioms in combination with modifiers that seemed likely to be of the conjunction modification kind using the corpora 'ENCOW16A (World Englishes)' and 'DECOW16A (German, Austrian and Swiss German)' at web-corpora.org.

In (11) and (12), our four idioms are paired up by language. However, there are good reasons to rather pair them up as in (13) and (14). In order to make those reasons more obvious, (13) and (14) do not contain the original German idioms but their literal translations (as if they existed in English that way).

- (13) a. kick the bucket
 b. pass on the spoon
- (14) a. bite the dust
 b. bite into the grass

Whereas buckets and spoons, just like belts, are typical personal possessions, dust and grass can be interpreted as types of ground. Personal possessions and their traits, like their brand and/or their material, invite inferences about their possessors (see, e.g., Belk 1988), while grounds and their traits, like their surface and/or what you find on it, invite *pars pro toto* inferences about the locations that they are a part of (for a somewhat similar reasoning based on conceptual contiguity, see Stathi 2007: 92). Building on this and on Ernst's (1981) definition of conjunction modification, see Section 5.2.3, we expected that the analyses of our corpus examples would contain a proposition including **die**(*x*) and a proposition of the form 'x has a MODIFIER bucket/spoon' or 'the dust/grass is MODIFIER'¹¹ and that it would be necessary at times to reinterpret the latter proposition figuratively, as in the analysis of the *Gucci belts* example in (10), or to draw non-figurative inferences from it.

To make the possessive relation in our first pair of idioms explicit also in cases where there is no possessor (as there is in (6)) or no possessive determiner (as there is in (9)), we will also co-index the definite expressions *the bucket*, *the spoon* with the subjects, in analogy to (9) (e.g. *the_i bucket_i*). We treat the definites in these cases as weak possessive definites (in the sense of Poesio 1994; Barker 2005), of the sort we find in (15) (from Le Bruyn 2014).

¹¹As Ernst (1981) expresses at the top and bottom of page 60, in (47), and in the middle of page 64, the second conjunct in conjunction modification is not limited to 'x has a MODIFIER y' but can take on different forms. Given that this second proposition is anchored in the first proposition, we adjust its tense/aspect/mood accordingly.

- (15) a. I hit him on the hand.
 b. He raised the hand.

Le Bruyn's analysis of the definite in these examples (at some step of the analysis) involves a relation to a PRO that is co-indexed with an (intrinsic) possessor, as in (16) (adapted from Le Bruyn 2014: 324).

$$(16) \text{ the PRO}_i \text{ hand} \overset{\text{trans}}{\rightsquigarrow} \iota z(\mathbf{hand}(z) \wedge \mathbf{intrinsically_belong_to}(i)(z))$$

In the following, when we use co-indexation on the definites in our idioms (e.g. *the_i bucket*), we will do this as a short-cut for an analysis of the sort in (16), although we are not committed to a particular account of weak (possessive) definites at this point. With these observations in mind, let us turn to our corpus examples.

5.3.3 Corpus examples of conjunction modification

For each of our four idioms, we will now discuss a corpus example that we think fits Ernst's conjunction modification category. The first example in this line-up is about the death of Hugo Chávez, the former President of Venezuela, see (17).

- (17) Venezuela's Friend of the Working Class, Hugo Chávez, *kicked the golden bucket* with an estimated net worth of 2 billion dollars.¹²

A conjunction modification analysis of this example in our representation format looks as in (18).

¹²<https://canadafreepress.com/article/a-socialism-spill-on-aisle-9> (last accessed on 5 April 2018)

(18) Conjunction modification analysis of (17):

- s_1 : *Hugo Chávez_i kicked the_i ~~golden~~ bucket.*
 \rightsquigarrow *id* p_1 : ‘Hugo Chávez died.’
- s_2 : ~~*Hugo Chávez_i kicked the_i golden bucket.*~~
 \rightarrow *lit* p_2 : ‘Hugo Chávez had a golden bucket.’
 \rightsquigarrow *inf* p_2' : ‘Hugo Chávez was rich.’
- p_1 & p_2' : ‘Hugo Chávez died, who was rich.’

As mentioned underneath (14), the material of a personal possession like a bucket invites inferences about its possessor. And since the material gold is a well-known symbol for wealth, stating that the late Hugo Chávez had a golden bucket (p_2) invites the inference that he was rich (p_2'). If you take that inference to be a figurative reinterpretation of p_2 , which seems to be the most plausible variant here, then nothing is said about Hugo Chávez having a golden bucket. All that you obtain in the end is that he was rich (cf. the analysis of Ernst’s *Gucci belts* example in (10)). In conjunction, p_1 and p_2' then result in ‘Hugo Chávez died, who was rich.’¹³

¹³An anonymous reviewer correctly observed that sentences such as *Hugo Chávez kicked the drunk/poor/70-year-old bucket* cannot (easily) express ‘Hugo Chávez died drunk/poor/at the age of 70’ and wondered why this should be the case. Following the conjunction modification analysis, the answer would go as follows: Neither literal drunk nor literal poor makes any sense as a modifier of literal *bucket* (a bucket can neither be drunk nor poor). This is different with literal 70-year-old, which does make sense as a modifier of literal *bucket* (a bucket can certainly be 70 years old), but maybe having a 70-year-old bucket (in contrast to having a rusty bucket, for example) is simply not graphic enough to be easily interpreted in a figurative manner.

The above does not mean, of course, that golden is the only possible modifier that can occur within a conjunction modification of *kick the bucket*. Consider the following example:

To her detractors, the “iron lady” has finally kicked the tin bucket – may she rust in peace.
<https://dinmerican.wordpress.com/2013/04/08/53476>.

Just like literal golden, literal tin does make sense as a modifier of literal *bucket*, as a tin bucket is a steel bucket coated with zinc oxide, which makes the steel more rigid and rugged, and there is an obvious figurative interpretation of the Iron Lady having such a steel bucket, namely that she was tough and uncompromising, as the name *Iron Lady* already indicates.

Our second corpus example is about the mentalist Vincent Raven, who, just like Uri Geller, claims to be able to bend spoons by sheer mental power and who almost died from a stroke that he had after falling on his head. See (19) for the example and (20) for the analysis.

- (19) Oder Vincent Raven aus Uri Gellers ProSieben-Sendung, der einen Unfall hatte und beinahe *den verbogenen Löffel abgegeben hätte*.¹⁴

‘Or Vincent Raven from Uri Geller’s show on ProSieben [German TV channel], who had an accident and almost *passed on the bent spoon.*’

- (20) Conjunction modification analysis of (19):

s_1 : *Vincent Raven_i almost passed on the_i ~~bent~~ spoon.*
 $\rightsquigarrow id$ p_1 : ‘Vincent Raven almost died.’

s_2 : ~~*Vincent Raven_i almost passed on the_i bent spoon.*~~
 $\rightarrow lit$ p_2 : ‘Vincent Raven has a bent spoon.’
 $\rightsquigarrow inf$ p_2' : ‘Vincent Raven bends spoons.’

p_1 & p_2' : ‘Vincent Raven, who bends spoons, almost died.’

Just as idiomatic *kick the bucket* in English, idiomatic *pass on the spoon* in German means ‘die’ (p_1). And just as golden in (17) nonetheless applies to the literal meaning of the noun *bucket*, bent in (19) nonetheless applies to the literal meaning of the noun *spoon*, and, here too, this happens in an additional proposition (p_2) that is independent of the proposition that expresses the meaning of the idiom. However, learning that someone has a bent spoon is far less telling than learning that someone has a Gucci belt or a golden bucket. In order for readers/listeners to be able to interpret this, they need some knowledge about Vincent Raven or Uri Geller’s show “The next Uri Geller” or a telling linguistic or non-linguistic context, so that they get the inference p_2' that Vincent

¹⁴<https://carolin-neumann.de/2009/02/fuehlt-euch-bravo> (last accessed on 5 April 2018)

Raven bends spoons. And if they take that inference to be a figurative reinterpretation of p_2 , then the content of p_2 plays no role in the final interpretation of (19), so that there is no claim that Vincent Raven actually has a bent spoon.

Our third corpus example is about the three ideals of the French Revolution and the lives that were taken in the attempt to achieve these ideals, see (21).

- (21) It was the great Trinity of the French Revolution, and you can still see it carved in stone over town halls and elsewhere in France: ‘Liberty, Equality, Fraternity’. But the greatest of these, it turns out, is ‘Equality’. ‘Liberty’ soon *bit the blood-spattered dust* along with ‘Fraternity’ as the drive to the unattainable goal of ‘Equality’ took over as it was bound to do.¹⁵

For a conjunction modification analysis of this example, see (22).

- (22) Conjunction modification analysis of (21):

s_1 : *Liberty bit the ~~blood-spattered~~ dust.*
 $\rightsquigarrow id$ p_1 : ‘Liberty died.’
 $\rightsquigarrow inf$ p_1' : ‘Liberty was no longer pursued.’

s_2 : *~~Liberty bit~~ the blood-spattered dust.*
 $\rightarrow lit$ p_2 : ‘The dust was blood-spattered.’
 $\rightsquigarrow inf$ p_2' : ‘The location was blood-spattered.’
 $\rightsquigarrow inf$ p_2'' : ‘People lost their lives.’

p_1' & p_2'' : ‘Liberty was no longer pursued, and people lost their lives.’

If you state that an ideal, like liberty, bit the dust (s_1), you state that it died (p_1). Since an ideal cannot literally die, however, this is to be reinterpreted figuratively, which, in our case, results in something like: ‘Liberty was no longer pursued.’ (p_1').

¹⁵<http://thebritishresistance.co.uk/tim-haydon/1637-the-destructive-lie-of-equality>
 (could no longer be accessed on 5 April 2018)

The inference from ‘The dust was blood-spattered.’ (p_2) to ‘The location was blood-spattered.’ ($p_{2'}$) is not something that Ernst assumes. However, as mentioned underneath (14), dust can be interpreted as a type of ground, whose surface and/or what you find on it (like spattered blood) invite *pars pro toto* inferences about the location that the ground is a part of. In an additional inferential step, we take this location to be the location of the event expressed by the idiom.¹⁶ From ‘The location was blood-spattered.’ ($p_{2'}$), it can then be inferred that people lost their lives ($p_{2''}$), especially in the context of the French Revolution. Combined, $p_{1'}$ and $p_{2''}$ result in ‘Liberty was no longer pursued, and people lost their lives.’

Our fourth example is about the 1925 peasant court in the high-lying Renchtal of the Black Forest in Germany, at which the peasant who hosted it during the last week of that year offered his guests a dish that, among others, had cost the lives of several little bunnies, see (23) for the example and (24) for the analysis.

(23) Der vorbedachte Hauswirt hat für die Bedürfnisse seiner Gäste bestens gesorgt. Mehrere Häslein mussten fürs Bauerngericht *ins schneeige Gras beißen* und ein Schwein und Kalb das Leben lassen.¹⁷

‘The thoughtful landlord took perfect care of his guests’ needs. For the peasant court, several little bunnies had to *bite into the snow-covered grass*, and a pig and a calf had to give their lives as well.’

¹⁶In all the examples that follow, we assume that the steps from ‘dust/grass’ to ‘a location that contains the dust/grass’ to ‘the location of the event in question’ are fairly natural inferences that are drawn in discourse, and we will not specify these steps any further.

¹⁷<http://www.museum-durbach.de/heiteres-und-geschichtliches/die-bottenauer-und-ihr-bauerngericht.html> (last accessed on 5 April 2018)

(24) Conjunction modification analysis of (23):

- s_1 : *Several little bunnies had to bite into the ~~snow-covered~~ grass.*
 $\rightsquigarrow id$ p_1 : ‘Several little bunnies had to die.’
- s_2 : *~~Several little bunnies had to bite into~~ the snow-covered grass.*
 $\rightarrow lit$ p_2 : ‘The grass was snow-covered.’
 $\rightsquigarrow inf$ p_2' : ‘The location was snow-covered.’
- p_1 & p_2' : ‘Several little bunnies had to die, and the location was snow-covered.’

Whereas in English you bite the dust, in German you bite into the grass. As a type of ground, grass, just like dust, invites *pars pro toto* inferences about the location that it is a part of, so that we easily get from the grass being snow-covered (p_2) to the location being snow-covered (p_2'). Apart from the two additional inferences in (22) (from ‘Liberty died.’ to ‘Liberty was no longer pursued.’ and from ‘The location was blood-spattered.’ to ‘People lost their lives.’), (24) and (22) work the exact same way.

Conjunction modification is not restricted to prenominal modification, though. In example (25), the modifier is neither an attributive adjective nor a noun but a non-restrictive relative clause. The example is taken from Ludwig Ganghofer’s 1914 novel *Der Ochsenkrieg* (English title: *The War of the Oxen*).

(25) Und während die ausgesperrten siebenunddreißig Reiter ein zorniges Geschrei erhoben, kam es innerhalb des Tores zwischen der Besatzung des Grenzwalles und den drei Abgeschnittenen zu einem Scharmützel, in dem der heilige Zeno Sieger blieb; aber zwei von seinen Soldknechten mußten *ins Gras beißen, das bei dieser mitternächtigen Finsternis kaum zu sehen war*.¹⁸

¹⁸http://freilesen.de/werk_Ludwig_Ganghofer,Der-Ochsenkrieg,1106,8.html
 (last accessed on 5 April 2018)

‘And while the locked out thirty-seven horsemen clamored furiously, there was a skirmish within the gateway between the garrison of the boundary wall and the three horsemen that had been cut off, in which Saint Zeno was victorious; but two of his mercenaries had to *bite into the grass*, which was hardly visible in this midnight darkness.’

A conjunction modification analysis of this example looks as in (26).

(26) Conjunction modification analysis of (25):

- s_1 : *Two of his mercenaries had to bite into the grass, which was hardly visible in this midnight darkness.*
- \rightsquigarrow_{id} p_1 : ‘Two of his mercenaries had to die.’
- s_2 : ~~*Two of his mercenaries had to bite into the grass,*~~ *which was hardly visible in this midnight darkness.*
- \rightarrow_{lit} p_2 : ‘The grass was hardly visible in this midnight darkness.’
- \rightsquigarrow_{inf} p_2' : ‘The location was hardly visible in this midnight darkness.’
- p_1 & p_2' : ‘Two of his mercenaries had to die, and the location was hardly visible in this midnight darkness.’

As in (23), *ins Gras beißen* means ‘die’ here (p_1) – independently of any literal grass – but still the modifier which was hardly visible in this midnight darkness, just like the modifier snow-covered in (23), applies to the literal meaning of the noun *grass*, which happens in an additional proposition (p_2) that is independent of p_1 . And as in (23), the modification of *grass* is interpreted as a modification of the location of the dying event, just like the modification of *dust* in (21). The additional proposition p_2 , which in this case is explicitly given by the non-restrictive relative clause (and therefore is easier to “unpack” than conjunction modification by an adjective or a noun, for which one always has to add a suitable relation to create a proposition), is then interpreted as ‘The location was hardly visible in this midnight darkness.’ (p_2'). Together, p_1 and p_2'

result in: ‘Two of his mercenaries had to die, and the location was hardly visible in this midnight darkness.’

In the following section, we will address three examples that are more complex cases of conjunction modification, either because they require additional background knowledge or because they go beyond a simple analysis of conjunction modification involving two propositions, since they involve a third one. After these examples, we will discuss corpus examples for which an analysis in terms of conjunction modification might not be the only option.

5.3.4 Complex conjunction modification examples

The following example, (27), is taken from a review of *Enigma Rosso* (English title: *Red Rings of Fear*), a 1978 Italian-German-Spanish giallo film. In the example, the idiom *den Löffel abgeben* ‘to pass on the spoon’ is slightly altered, as it contains *Löffel* ‘spoon’ in the plural (which might reflect that more than one person died) and, more importantly for our purposes, the modifier *langen*, which is an inflected form of the adjective *lang* ‘long’.

- (27) Die Geschichte um die Umtriebe in einem Mädcheninternat, das in Teenagerprostitution verstrickt ist und dessen bezaubernde Zöglinge nach und nach *die langen Löffel abgeben*, gibt einen nett anzuschauenden Thriller ab – leider nicht mehr.¹⁹

‘The story of the activities at a girls’ boarding school that is entangled in teenage prostitution and whose enchanting pupils, one by one, *pass on the long spoons*, makes for a thriller that is nice to watch – unfortunately, that is as far as it goes.’

¹⁹<http://www.christiankessler.de/enigmarosso.html> (last accessed on 5 April 2018)

(28) Incomplete conjunction modification analysis of (27):

- s_1 : *The enchanting pupils_i pass on the_i ~~long~~ spoons.*
 \rightsquigarrow *id* p_1 : ‘The enchanting pupils die.’
- s_2 : ~~*The enchanting pupils_i pass on the_i long spoons.*~~
 \rightarrow *lit* p_2 : ‘The enchanting pupils have long spoons.’
 \rightsquigarrow *inf* p_2' : ‘The enchanting pupils are ???’
- p_1 & p_2' : ‘The enchanting pupils die, who are ???’

Since the proposition ‘The enchanting pupils have long spoons.’ does not make any sense as the second conjunct of this example (not even considering the larger context of the example and/or the movie itself), that proposition must be figuratively reinterpreted. But how? One remote possibility to make sense of ‘The enchanting pupils have long spoons.’ would be to evoke yet another idiom, *jemandem die Löffel lang ziehen* ‘(lit.) pull someone.DAT the spoons long’, with a figurative use of *spoons* for *ears*,²⁰ which is commonly used to refer to a teacher or a parent scolding or punishing a pupil or a child. Under this interpretation, you might infer from p_2 that the pupils have been punished before, or are being punished by being killed, as in (29).

²⁰This figurative meaning of *spoons* also appears in expressions like *jemandem ein paar hinter die Löffel geben* ‘(lit.) to give someone.DAT a few behind the spoons’ (fig. ‘to slap someone’), which might also be the idiom evoked here, and also in *sich etwas hinter die Löffel schreiben* ‘(lit.) to write one-self.DAT sth. behind the spoons’ (fig. ‘to make sure to remember sth.’).

(29) First conjunction modification analysis of (27):

- s_1 : *The enchanting pupils_i pass on the_i ~~long~~ spoons.*
 \rightsquigarrow *id* p_1 : ‘The enchanting pupils die.’
- s_2 : *~~The enchanting pupils_i pass on the_i long spoons.~~*
 \rightarrow *lit* p_2 : ‘The enchanting pupils have long spoons.’
 \rightsquigarrow *inf* p_2' : ‘The enchanting pupils are being / have been punished.’
- p_1 & p_2' : ‘The enchanting pupils die, who are being /
 have been punished.’

The figurative interpretation of p_2 on the basis of *jemandem die Löffel lang ziehen* ‘pull someone the spoons long’, which results in p_2' in (29), might be facilitated by the fact that in this idiom the noun *Löffel* ‘spoon’ occurs in the plural, just as in (27).

The following example, (30), points to a more plausible option of reinterpreting ‘The enchanting pupils have long spoons.’ It is about Bertolt Brecht’s play *Mutter Courage und ihre Kinder* (English title: *Mother Courage and Her Children*).

(30) Im Nordbayerischen Kurier schrieb Gero v. Billerbeck über “Eine Moritat gegen den Krieg”: “Wer mit dem Teufel frühstückt, muss einen langen Löffel haben. Der Feldprediger kennt sich aus und weiß auch, dass dieser Dreißigjährige Krieg ein gottgefälliger Glaubenskrieg ist. Und weil er selbst nicht mitmisch, sondern nur davon profitiert, wie seine Weggenossin Anna Fierling, wird er den zitierten langen Löffel ebenso wenig *abgeben* müssen [...]”²¹

‘In the N.K. [German newspaper] Gero v. Billerbeck wrote about “A Ballad Against the War”: “He who sups with the devil must have a long spoon. The field preacher knows his way around and is also aware of the fact that this Thirty Years War is a God-pleasing religious war. And because he does not get involved but only benefits from it, like his companion Anna Fierling, he will not have to *pass on the quoted long spoon* [...]”’

²¹<http://www.luisenburg-aktuell.de/id-2009/articles/bertolt-brecht-mutter-courage-und-ihre-kinder.html> (could no longer be accessed on 5 April 2018)

A conjunction modification analysis of the example in (30) looks just like the conjunction modification analysis of the example in (27), but now we can make sense of someone having a long spoon, because the beginning of the example in (30) indicates what that is supposed to mean by making reference to the proverb *He who sups with the devil must have a long spoon*. This proverb expresses a conditional (you sup with the devil \Rightarrow you have a long spoon) from which we can infer by pragmatic strengthening or conditional perfection (Geis & Zwicky 1971), i.e. by turning the conditional into a biconditional (you sup with the devil \Leftrightarrow you have a long spoon), that people with a long spoon sup with the devil and hence, just like the devil himself, must be deceitful. On that account, we get the analysis in (31).

(31) Second conjunction modification analysis of (30):

- s_1 : *The field preacher_i will not have to pass on the_i ~~long~~ spoon.*
 $\rightsquigarrow id$ p_1 : ‘The field preacher will not have to die.’
- s_2 : *~~The field preacher_i will not have to pass on the_i long spoon.~~*
 $\rightarrow lit$ p_2 : ‘The field preacher has a long spoon.’
 $\rightsquigarrow inf$ $p_{2'}$: ‘The field preacher is deceitful.’
- p_1 & $p_{2'}$: ‘The field preacher, who is deceitful, will not have to die.’

Analogously, we could now infer from p_2 in (28) (‘The enchanting pupils have long spoons.’) that the enchanting pupils are deceitful and, on the basis of that inference, complete the analysis of (27) as shown in (32).

(32) Complete conjunction modification analysis of (27):

- s_1 : *The enchanting pupils_i pass on the_i ~~long~~ spoons.*
 $\rightsquigarrow id$ p_1 : ‘The enchanting pupils die.’
- s_2 : ~~*The enchanting pupils_i pass on the_i long spoons.*~~
 $\rightarrow lit$ p_2 : ‘The enchanting pupils have long spoons.’
 $\rightsquigarrow inf$ p_2' : ‘The enchanting pupils are deceitful.’
- p_1 & p_2' : ‘The enchanting pupils die, who are deceitful.’

What these examples show is that we sometimes need considerable background knowledge (e.g. of the proverb *He who sups with the devil must have a long spoon.*) to make sense of the idiom-modifier combination and find an appropriate overall interpretation.

Our next example is complex for a different reason than the necessity of considerable background knowledge. It is complex because there is more going on than just conjunction modification. The example is from a German review of *Journey to the Center of Time*, a 1967 U.S. science fiction film, see (33) for the example and (34) for its analysis.

(33) Stanton Sr. war ein gutherziger Millionär, der viel Geld in außergewöhnliche Forschung steckte und leider kürzlich den silbernen Löffel an Stanton Jr. abgab, welcher nix von Friede, Freude, Wissenschaft wissen, sondern Geld machen will und zwar pronto.²²

‘Stanton Sr. was a kind-hearted millionaire who invested a lot of money in extraordinary research and, unfortunately, recently *passed on the silver spoon* to Stanton Jr., who does not want to know about peace, joy, science, but wants to make money, pronto.’

²²<http://www.filmflausen.de/Seiten/centeroftime.htm> (last accessed on 5 April 2018)

(34) Analysis of (33):²³

s_1 : *Stanton Sr._i passed on the_i ~~silver~~ spoon ~~to Stanton Jr.~~*
 \rightsquigarrow *id* p_1 : ‘Stanton Sr. died.’

s_2 : ~~*Stanton Sr._i passed on the_i silver spoon to Stanton Jr.*~~
 \rightarrow *lit* p_2 : ‘Stanton Sr. had a silver spoon.’
 \rightsquigarrow *inf* p_2' : ‘Stanton Sr. was rich.’

s_3 : *Stanton Sr._i passed on the_i silver spoon to Stanton Jr.*
 \rightarrow *lit* p_3 : ‘Stanton Sr. passed on his silver spoon to Stanton Jr.’
 \rightsquigarrow *inf* p_3' : ‘Stanton Sr. passed on his wealth to Stanton Jr.’

p_1 & p_2' & p_3' : ‘Stanton Sr. died, who was rich, and he passed on his wealth to Stanton Jr.’

Just like in the analyses of all the previous conjunction modification examples, we have one proposition that includes the idiomatic meaning of the idiom, namely that Stanton Sr. died (p_1), and one proposition in which the literal meaning of the modifier is applied to the literal meaning of the idiom’s noun, namely that Stanton Sr. had a silver spoon (p_2), from which we infer that he was rich (p_2'),²⁴ as in the Gucci *belts* example in (8) and the golden *bucket* example in (17).

What sets this example apart from all the previous conjunction modification examples, however, is that its analysis does not result in the conjunction of two but three propositions. This is due to the addition of the literal goal argument *to Stanton Jr.*, which, as soon as it is interpreted (s_3), enforces *pass on the spoon* to be literally interpreted as well (p_3) because there is no idiom *pass on the spoon to sb.* In parallel to the

²³Here, it is not just s_1 and s_2 but s_1 , s_2 , and s_3 that are one and the same string with different parts of that same string being semantically interpreted in s_1 , s_2 , and s_3 (cf. footnote 7).

²⁴The reinterpretation of ‘Stanton Sr. had a silver spoon.’ as ‘Stanton Sr. was rich.’ is additionally facilitated by the existence of the German idiom *mit einem silbernen Löffel im Mund geboren sein* ‘to be born with a silver spoon in the mouth’ (with its English equivalent *to be born with a silver spoon in one’s mouth*), which means that one is wealthy by birth.

figurative interpretation of ‘having a silver spoon’ (p_2) as ‘being rich’ ($p_{2'}$), ‘passing on your silver spoon to sb’ (p_3) is figuratively reinterpreted as ‘passing on your wealth to sb’ ($p_{3'}$).

In the end, we do not only have different interpretations of the idiom’s noun *spoon* but also different interpretations of the idiom’s verb *pass on*. Whereas p_1 includes the idiomatic meaning of *pass on*, $p_{3'}$ includes its literal meaning in the sense of ‘hand down’ or ‘bequeath’, i.e. a change of possession, and the goal phrase specifies the beneficiary of the inheritance.

In the next section, we will discuss a number of examples for which it is less clear that they involve conjunction modification. Those examples caused intense debates among the three authors of this paper, as at least one of the authors preferred to analyze them in terms of what we will call extended external modification, a broader construal of Ernst’s external modification not limited to domain delimitation (cf. Stathi 2007: Section 4.2, in which she argues for a similar approach whilst retaining Ernst’s original term). In the following section, we will provide reasons why such an extended external modification analysis might be a valid alternative for the examples.

5.3.5 Controversial cases

We have shown that our four idioms can be divided into two groups, *kick the bucket* and *pass on the spoon* vs. *bite the dust* and *bite into the grass*: buckets and spoons are typical personal possessions, whose properties invite inferences about their possessors, whereas dust and grass can be interpreted as different types of ground, whose properties invite inferences about the event location. When we modify an event location, however, the event is modified as a whole, which opens up the option to analyze such a modification as a type of external modification, not in the sense of Ernst, i.e. as domain

delimitation, but in a more general or extended sense. There are two factors that point in this direction.

First, we pointed out that Ernst observed that external modifiers often allow an adverbial paraphrase. Given that adverbs, however, are not always domain delimiters (frame-setting sentence adverbials) but can be of various kinds, depending on where they attach and what they modify, we expect external modification in idioms not to be restricted to domain delimiters either. For example, one prominent kind is event-related modification, which, however, still relates to the idiom as a whole and could, for that reason, also be analyzed as a type of external modification.

Second, the data that Ernst uses to illustrate external modification either involve relational adjectives (e.g. *social* in (2)) or prenominal noun modifiers (of the *stone lion* type). These are both types of modifiers that express an underspecified relation between modifier and modifiee (see, e.g., McNally & Boleda 2004), and a hypothesis one could pursue in future research is that this additional relation facilitates external modification.²⁵ In this section, we discuss examples that could be analyzed in terms of conjunction modification, but which also all contain relational adjectives and therefore could also be analyzed as extended external modification. While we will not offer the details of a compositional analysis of these cases – which we have not done for any of the examples in Section 5.3.3 and Section 5.3.4, either – the intuitive idea should be clear.²⁶

With these considerations in mind, let us see why the following examples caused controversies among the authors of this paper. Our first example is about a South Tyrolean writer, Norbert Conrad Kaser, who apparently did not find the literature of

²⁵This is not Ernst's observation, who, as we pointed out above, assumes that external modification is not restricted to a particular lexical class of adjectives.

²⁶For further discussion and a possible analysis of external modification in this broader, extended sense, see Gehrke & McNally (2019).

his fellow writers very compelling, see (35).

- (35) Erstes Aufsehen erregte der junge Kaser an einer Studientagung der Südtiroler Hochschulschaft, die in Brixen von Gerhard Mumelter organisiert wurde. Hier meinte er, dass 99% der Südtiroler Literaten am besten nie geboren wären, sei netwegen könnten sie noch heute *ins heimatliche Gras beißen*, um nicht weiteres Unheil anzurichten.²⁷

The young Kaser caused a first stir at a South Tyrolean study conference, which was organized in Brixen by Gerhard Mumelter. There he said that it would have been better if 99% of South Tyrolean writers had never been born and that they have his blessing to *bite into the home grass* by today, so as not to do any more mischief.

If we take this to be conjunction modification, the analysis looks as in (36).

- (36) Conjunction modification analysis of (35):²⁸

s_1 : *They_i have his blessing to bite into the_i ~~home~~ grass by today.*
 $\rightsquigarrow id$ p_1 : ‘They have his blessing to die by today.’

s_2 : *~~They_i have his blessing to bite into the_i home grass~~ by today.*
 $\rightarrow lit$ p_2 : ‘The grass would be their home grass.’
 $\rightsquigarrow inf$ $p_{2'}$: ‘The location would be their homeland.’

p_1 & $p_{2'}$: ‘They have his blessing to die by today, and the location would be their homeland.’

While p_1 (‘They have his blessing to die by today.’) is the idiomatic meaning of s_1 (*They_i have his blessing to bite into the_i grass by today.*), $p_{2'}$ (‘The location would be their homeland.’) is an inference from p_2 (‘The grass would be their home grass.’),

²⁷<http://www.selected4you.de/dolomiten/thema/norbert-c-kaser> (last accessed on 5 April 2018); see Stathi (2007: 91) for a variant of this example in which the statement of the young Kaser is reported in direct speech – and not in indirect speech, as in (35).

²⁸As *heimatlich* ‘of one’s home, native, local’ (a relational adjective consisting of *Heimat* ‘home-land’ + the adjectival suffix *-lich*) and *home* are relational (any home must be the home of someone or something), the definite determiner of the verb’s internal argument is co-indexed with the verb’s external argument, just like in the *kick the bucket* and *pass on the spoon* examples.

which again is the non-idiomatic and non-figurative (hence $\rightarrow lit$) meaning of s_2 (*the_i home grass* – the definite NP that is (part of) the verb’s internal argument in (35)). The two independent propositions p_1 and p_2' are then conjoined into ‘They have his blessing to die by today, and the location would be their homeland.’ We perceive p_2' as some kind of side information (since it is non-restrictive modification) that conveys the idea that the South Tyrolean writers would make sure to die in/on their homeland.

Given the broader understanding of external modification outlined above, where the modifier contributes something external to the idiom (or modifies the idiom as a whole), we might also interpret (35) as in (37):

(37) Extended external modification analysis of (35):²⁹

- s_1 : *They_i have his blessing to PRO_i bite into the ~~home~~ grass by today.*
 $\rightsquigarrow id$ p_1 : ‘They have his blessing to die by today.’
- s_2 : *~~They_i have his blessing to~~ PRO_i bite into the home grass ~~by today~~.*
 $\rightsquigarrow id$ p_2 : ‘They would die in their homeland.’
- p_1 & p_2 : ‘They have his blessing to die by today, and the dying event would take place in their homeland.’

The analysis of p_1 (‘They have his blessing to die by today.’) is more or less the same as before: the idiomatic meaning of s_1 (*They_i have his blessing to PRO_i bite into the grass by today.*). The difference lies in p_2 (‘They would die in their homeland.’), which comes about by taking the relational adjective *heimatlich* ‘of one’s home, native, local’ as specifying the location for the dying event associated with the idiom as a whole and by resolving the relation of home to the subjects of this dying event (to keep things a bit more simple we did not represent this here). This looks more like an analysis in terms

²⁹PRO is meant as a convenient notation for indicating an implicit subject argument that plays a role in the analysis. Grammar frameworks without PRO will usually have appropriate counterparts in their structural analyses of our examples.

of external modification, just not in Ernst's more restricted sense, because the modifier is not a domain delimiter. It is still a non-restrictive kind of modification, but external modification should in principle be possible restrictively and non-restrictively. The two independent propositions p_1 and p_2 are then conjoined into 'They have his blessing to die by today, and the dying event would take place in their homeland.' Again, we perceive p_2 as some kind of side information (since it is non-restrictive modification) that conveys the idea that the South Tyrolean writers might as well die in South Tyrol, where they happen to be. The example in (38) is similar at first sight.

- (38) Auch die deutsche Geschichte mag im Gesamten alles Andere als rosig sein, doch ich lebe in diesem Staate und somit MIT seiner Vergangenheit, seiner Gegenwart und höchstwahrscheinlich auch zukünftig, was da heissen wird, dass ich eines Tages *in deutsches Gras beissen* werde.³⁰

German history as a whole may be anything but rosy as well, but I live in this country and thus WITH its past, its present and most likely also in the future, which will mean that one day I will *bite into German grass*.

An analysis in terms of conjunction modification looks like in (39).

- (39) Conjunction modification analysis of (38):

s_1 : *One day, I will bite into ~~German~~ grass.*

$\rightsquigarrow id$ p_1 : 'One day, I will die.'

s_2 : *~~One day, I will bite into~~ German grass.*

$\rightarrow lit$ p_2 : 'The grass will be German.'

$\rightsquigarrow inf$ p_2' : 'The location will be Germany.'

p_1 & p_2' : 'One day, I will die, and the location will be Germany.'

³⁰<http://www.chat24.de/archive/index.php?t-256.html> (could no longer be accessed on 5 April 2018)

Again, we infer from the second proposition (‘The grass will be German.’) that the location of the dying event will be Germany. However, this kind of analysis faces the problem that the modifier in this case does not seem to be adding mere side information, as non-restrictive modification would, but it rather functions as a restrictive modifier. In particular, if we left out the modifier entirely, we would lose the main information of the sentence and it would not make much sense anymore in this context (unlike in our previous example in (35)). So, adding the modifier via conjunction modification wrongly places the meaning of the modifier in the secondary proposition rather than the primary proposition.

Understanding the term *external modification* in a broader, extended sense could be a way out of this dilemma, and we could interpret the whole sentence as one proposition, as in (40).

(40) Extended external modification analysis of (38):

s: *One day, I will bite into German grass.*

\rightsquigarrow *id* *p*: ‘One day, I will die (my dying will take place) in Germany.’

This interpretation is further facilitated by the fact that *German*, like all ethnic adjectives, is a relational adjective.

Let us now move on to controversial cases in which the referent of the literal meaning of the idiom’s noun is a typical personal possession, and let us remind ourselves that personal possessions and their features can invite inferences about their possessors. The example in (41) is about Gid, a hypothetical God-like creature that is postulated and used in a proof of the existence of God in which the author talks about Gid’s mortality.

(41) He is presumably mortal himself; at least, being a creature of this universe, when (if) it collapses back to a mathematical point again (called the “Big Crunch”), Gid would die then, if he hasn’t already *kicked the celestial bucket*.³¹

³¹<http://biglizards.net/blog/archives/2011/08> (last accessed on 5 April 2018)

If we analyze this example in terms of conjunction modification, we get (42).

(42) Conjunction modification analysis of (41):

s_1 : ... *if Gid_i hasn't already kicked the_i ~~celestial~~ bucket.*
 \rightsquigarrow_{id} p_1 : '... if Gid hasn't already died.'

 s_2 : ... *if Gid_i hasn't already kicked the_i celestial bucket.*
 \rightarrow_{lit} p_2 : 'Gid has a celestial bucket.'
 \rightsquigarrow_{inf} p_2' : 'Gid is a celestial being.'

 $p_1 \ \& \ p_2'$: '... if Gid, who is a celestial being, hasn't already died.'

Under this interpretation we assume the proposition p_2 that Gid has a celestial bucket, from which we infer that Gid is a celestial being (p_2'), metonymically, like a *pars pro toto* (if his bucket is celestial everything else might as well be, also he as a being). However, it is also clear that this involves an additional step. The simple proposition 'Gid has a celestial bucket' does not provide all of that content by itself.

An alternative analysis of (41) in terms of external modification – this time along the lines of Ernst's original idea that external modifiers are domain delimiters – is shown in (43), where the modification is, again, interpreted restrictively so that we only get one proposition.

(43) External modification analysis (in Ernst's sense) of (41):

s : ... *if Gid hasn't already kicked the celestial bucket.*
 \rightsquigarrow_{id} p : '... if Gid hasn't already died in the celestial domain.'
 \rightsquigarrow_{inf} p' : '... if Gid hasn't already ceased to exist as a celestial entity.'

This restrictive, external interpretation of the modifier leads to a completely different understanding though: Here, we assume that Gid might first cease to exist as a celestial entity (as expressed in p') to then become a terrestrial being, a mortal, and die as such when the 'Big Crunch' hits (as the remaining context in (41) suggests). Under the

conjunction interpretation in (42), on the other hand, which takes the modification to be non-restrictive, Gid dies only once and happens to be a celestial creature. The question, then, is how the text is actually supposed to be understood.

Yet another interpretation of (41) is provided in (44).

(44) Extended external modification analysis of (41):

s: ... *if Gid hasn't already kicked the celestial bucket.*
 \rightsquigarrow *id+inf* *p*: '... *if Gid hasn't already died a celestial death*
 (which is much more spectacular than an earthly death).'

This is clearly not a conjunction modification interpretation, since we do not add a second proposition (it is again a restrictive kind of modification), but it rather feels like a manner modifier of the event (the idiom as a whole) and should then be taken as yet another instance of extended external modification. This kind of interpretation might lead to an additional inferential step (provided in brackets in *p*), and it opens up the possibility to analyze an idiom like *kick the MOD bucket* on a par with cognate object constructions of the sort *die a MOD death*, in which the modifiers in question in turn have been taken to be event modifiers (see, e.g., Mittwoch 1998; Sailer 2010).

Finally, example (45) is about giardia, which are microscopic pear-shaped parasites that live in the intestines and cause Giardiasis, a diarrheal disease.

(45) Hi, die Giardien sollen doch bei 60-70°C ihren birnenförmigen Löffel abgeben. Warum muss ich dann meine Bettwäsche bei 90°C kochen?³²

Hi, the giardia are supposed to *pass on their pear-shaped spoon* at 60-70°C. Why do I have to wash my sheets at 90°C then?

An analysis of this example as conjunction modification would look like (46).

³²<https://www.katzen-links.de/forum/darmparasiten-giardien/giardien-faq-allumfassende-infosammlung-t69985-p6.html> (last accessed on 5 April 2018)

(46) Conjunction modification analysis of (45):

- s_1 : *The giardia_i are supposed to pass on their_i ~~pear-shaped~~ spoon at 60-70°C.*
- $\rightsquigarrow id$ p_1 : ‘The giardia are supposed to die at 60-70°C.’
- s_2 : *~~The giardia_i are supposed to pass on their_i pear-shaped spoon at 60-70°C.~~*
- $\rightarrow lit$ p_2 : ‘The giardia have a pear-shaped spoon.’
- $\rightsquigarrow inf$ p_2' : ‘The giardia are pear-shaped.’
- p_1 & p_2' : ‘The giardia, which are pear-shaped, are supposed to die at 60-70°C.’

As in the conjunction modification analyses of all the previous examples with *kick the bucket* and *pass on the spoon*, we here have a p_2 that includes a possession relation: ‘The giardia have a pear-shaped spoon.’ Unlike in the previous examples, however, but just like in *pull sb’s leg* in (5) and *tighten one’s belt* in (8), this possessive relation is explicitly expressed by a possessive determiner. We then again infer metonymically that if the giardia have a pear-shaped spoon, they themselves are pear-shaped.

However, at this point, the question arises whether we really get from the giardia (literally or metaphorically) having a pear-shaped spoon to them being pear-shaped; one author of this paper does not share the intuition that a pear-shaped spoon ever plays a role in this example. In that author’s opinion, the modifier seems to be attributed to the possessor right away, without the intermediate step of attaching it to ‘spoon’, even if syntactically this is where the modifier appears. This seems to indicate that if we explicitly add a possessor via a possessive determiner inside the nominal phrase, we can combine the modifier with that possessor rather than with the noun itself, as in (47).

(47) Possessor modification analysis of (45):

s_1 : *The giardia_i are supposed to pass on their_i ~~pear-shaped~~ spoon at 60-70°C.*

\rightsquigarrow_{id} p_1 : ‘The giardia are supposed to die at 60-70°C.’

s_2 : *~~The giardia_i are supposed to pass on their_i~~ pear-shaped spoon at 60-70°C.*

\rightarrow_{lit} p_2 : ‘The giardia are pear-shaped.’

p_1 & p_2 : ‘The giardia, which are pear-shaped, are supposed to die at 60-70°C.’

However, it is far from clear how this kind of analysis, which we dubbed possessor modification, would work in terms of a general semantic composition mechanism. Yet, the meaning we get is still: ‘And, by the way, the giardia are pear-shaped’, which is non-restrictive (as represented by the conjunction of p_1 and p_2 in (47)).

A problem similar to the one of how to analyze the composition of (45) arises with what (Ernst 1981: 66) calls ‘displaced epithets’:

(48) I balanced a thoughtful lump of sugar on the teaspoon.

(P.G. Wodehouse, cited in Hall 1973)

From this example, we conclude that the speaker was thoughtful, not the lump of sugar. The giardia’s pear-shaped spoon could then be of this kind, and the analysis would not involve conjunction modification at all. Again we do not have a semantic composition system to describe a displacement of epithets in a way that fits cases like these but does not over-generate and predict all kinds of interpretations to be possible when they are actually not.

On the other hand, if we analyze both examples in terms of something like conjunction modification with a possessive relation, metonymical inferences would get us from the speaker having (as part of balancing) a thoughtful lump of sugar to the speaker

being thoughtful, and from the giardia having a pear-shaped spoon to the giardia being pear-shaped. The question then is whether it is a fairly obvious metonymical inference: Is it common to infer from ‘I have a thoughtful lump of sugar.’ that ‘I am thoughtful.’?

In sum, what our examples in this section have shown is that it is not always straightforward to obtain an interpretation for a given modifier that is added to an idiom, and furthermore that it is not always clear which of Ernst’s three categories the kind of modification belongs to. Additionally, in most cases, even in our clear cases of conjunction modification, further inferences had to be drawn. They were not only based on the second proposition alone but also had to take context and world knowledge into account. In this section, we also saw that it might be possible to extend the notion of external modification beyond its original use to cover some other types of modifiers that we encountered. The broader, extended notion of external modification lumps together various types of modification that apply to the idiom as a whole, not just to the idiom’s noun. The modifiers can thus be interpreted on a par with adverbials, which also form a heterogeneous group, and we obtain an alternative to an analysis in terms of conjunction modification. External modification could be facilitated or mediated by the use of relational adjectives, though this would be a topic for future research. Finally, we discussed challenges that some of these examples entail for a precise compositional analysis, which we have to leave for future research for all our examples though.

In the following section, we will briefly show that challenges concerning additional inferences beyond literal, figurative, or idiomatic meaning and concerning the adequate formulation of semantic composition principles arise in other idiom data that do not, however, involve the kind of modification discussed so far. These data demonstrate that the observed pattern extends beyond the presence of a modifier that might (or might not) be analyzed in terms of conjunction modification.

5.4 Beyond modification

In this section, we study two corpus examples of *ins Gras beißen* that do not contain a modifier in the linguistic sense but still contain an adjustment of the idiom's noun *Gras*. As we have seen in (21), (23), (25), (35), and (38), the nouns *Gras* and *dust* lend themselves to a location interpretation and in the context of the idioms invite inferences about the location of the dying event.

Example (49) is from a review of *The Descent Part 2*, a 2009 British horror film.

- (49) Erneut werden billige Schockeffekte eingesetzt [... und] wieder ist es in der Höhle meist viel zu hell, und schon wieder mutieren die überlebenden Damen zu wahren Kampfmaschinen, nur um dann doch allesamt *ins Gras respektive ins Höhlengestein beißen* zu müssen.³³

‘Once again, there are cheap shock effects, and once again, it is way too bright inside the cave most of the time, and again, the surviving ladies mutate into true battle machines, but in the end they still have to *bite into the grass, or rather the cave rock*.’

Even though *bite into the grass, or rather the cave rock* does not contain a modifier and hence is not an example of idiom modification in the linguistic sense, it still contains an adjustment of the idiom's noun, and this adjustment could be analyzed by dissociating two propositions, just like in conjunction modification, see (50).³⁴

³³<http://www.kreis-archiv.de/filme/descent2.html> (last accessed on 5 April 2018)

³⁴Alternatively, we could also assume that this adjustment happens in the same proposition (e.g. for (50) we would get something like *The ladies have to bite into the cave rock instead of the grass*). However, no matter which route is ultimately the right one, we are still facing the same kind of compositionality issues outlined here.

(50) Analysis of (49):

- s_1 : *The ladies have to bite into the grass, ~~or rather the cave rock.~~*
 $\rightsquigarrow id$ p_1 : ‘The ladies have to die.’
- s_2 : ~~*The ladies have to bite into*~~ *the grass, or rather the cave rock.*
 $\rightarrow lit$ p_2 : ‘The grass is cave rock.’
 $\rightsquigarrow inf$ p_2' : ‘The location is cave rock.’
- p_1 & p_2' : ‘The ladies have to die, and the location is cave rock.’

As in our analyses of the conjunction modification examples, p_1 is concerned with the idiom (stating that the ladies have to die), whereas p_2 is all and only about the modification of the literal meaning of the idiom’s noun, which in this case only applies in the non-linguistic sense, as the added material is neither an adjective, nor a noun, nor a relative clause but the part *respektive ins Höhlengestein* ‘or rather into the cave rock’, which is combined with *beißen* ‘bite’ in a parallel fashion as is *ins Gras* ‘into the grass’. It is not clear how this interpretation can be obtained compositionally unless we impose a semantic decomposition on the idiom that is assumed to be absent from its conventional form.

A potentially even more problematic example is given in (51).

(51) Das soll er doch gesagt haben, der gute Caesar[,] bevor er statt ins Gras in den Marmorboden vom Senat gebissen hat.³⁵

‘He is supposed to have said that, our good old Caesar, before he bit into the marble floor of the Senate instead of the grass.’

In a parallel fashion to the previous example we might analyze this one along the lines of (52).

³⁵<http://www.rom-fanclub.de/Episode-1-Folgen-1-12/3719-ReEP01-/-F12-Die-Kalenden-des-Februar/Page-7.html> (last accessed on 5 April 2018)

(52) Analysis of (51):

- s_1 : *Caesar bit into ~~the marble floor of the Senate~~ instead of the grass.*
- \rightsquigarrow_{id} p_1 : ‘Caesar died.’
- s_2 : *~~Caesar bit into~~ the marble floor of the Senate instead of the grass.*
- \rightarrow_{lit} p_2 : ‘The grass was the marble floor of the Senate.’
- \rightsquigarrow_{inf} p_2' : ‘The location was the marble floor of the Senate.’
- p_1 & p_2' : ‘Caesar died, and the location was the marble floor of the Senate.’

This leads to the construction of the proposition p_2 above, and the following inference to the effect that Caesar died on the marble floor of the Senate. Again, we do not know how to get there via standard semantic composition principles. What is even worse, however, is that due to the negation that is part of the semantics of *statt* ‘instead of’, it is literally stated that Caesar did not bite into the grass. Therefore, our p_1 is not quite right; it should contain a negation. Nevertheless, we still get the interpretation that he died, only not on grass but on the marble floor of the Senate. So somehow since the entire idiom is present, its meaning is present as well. And substituting the literal *marble floor of the Senate* for the idiomatic *grass* has the effect that *grass* is understood literally as well.

5.5 Conclusion

In this paper, we reviewed Ernst’s (1981) classical three types of idiom modification (internal, external, and conjunction modification), followed by a close investigation of conjunction modification in semantically non-decomposable idioms as a particularly

challenging phenomenon for semantic theorizing. In order to get a deeper understanding of the scope of naturally occurring meaning effects in conjunction modification, we studied corpus data of two English and two German semantically non-decomposable idioms with the same idiomatic meaning but different formal structure. Some of our findings of the effects of idiom modification followed the general pattern of Ernst's observations, while others pointed to a possible relationship with external modification. Patterns of unexpected but apparently systematic inferences and contextual adjustments outside the core cases led us to investigate data beyond modification which demonstrated the need for assuming additional inferential mechanisms and pointed to effects that are clearly outside the range of regular semantic composition.

Many of the corpus examples with our two English and two German “dying idioms” which were originally collected as candidates for conjunction modification were accepted as such by all authors of the present study. In those cases, there was agreement that their analysis comprises a main proposition p_1 including the predicate **die**(x) and a secondary proposition p_2 of the form ‘ x has a MODIFIER bucket/spoon’ or ‘the dust/grass is MODIFIER’. Often it was also necessary to interpret these forms figuratively or to draw additional inferences from their literal meaning in order to obtain a coherent interpretation in context. Some examples, however, turned out to be controversial, and the available analytical tools did not provide an easy resolution for conflicting intuitions: Whereas some authors analyzed them as conjunction modification in combination with additional inferences, the other(s) preferred (a version of) external modification, where the notion of external modification had to be broadened compared to Ernst's original proposal.

We think that our data show that the distinction between semantically decomposable and semantically non-decomposable idioms might not be as categorical as Nunberg et al. (1994) thought (see also Bargmann & Sailer 2018). These idioms are certainly

not semantically monolithic lexical units with a complex syntactic structure. Not only are speakers aware of their internal structure, they also seem to be ready to fall back on alternative, literal meanings of smaller syntactic units, such as of the nominal head in a noun phrase complement, any time a consistent interpretation in the context of all lexical material in a given structure requires their retrieval. The meaning of these smaller units, otherwise unavailable in the idiomatic reading of the complete idiomatic expression, even serves as the basis for further interpretive processes, which can and must be entertained in parallel to the idiomatic reading of the idiom as a whole – minus material whose interpretation it cannot integrate. To us, it seems that this is a much more complex situation, and truly one-to-many, than most current semantic theories are ready to entertain. At the same time, corpus evidence suggests that the processes involved are far from unsystematic, and should definitely not be discarded into the realm of linguistically inexplicable creative wordplay.

Whichever way the open issues will ultimately be resolved, we have seen ample evidence that idioms are excellent instances of one-to-many relations between form and meaning, and that this becomes especially obvious in conjunction modification, where the idiomatic and the literal meaning of the idiom need to be present simultaneously.

Chapter 6

Idioms and the N-*after*-N construction

6.1 Introduction

Even though the literature contains contributions on both semantically decomposable idioms like *pull strings* (see, for example, Wasow et al. 1983, Nunberg et al. 1994, or Horn 2003) and the syntactically non-standard N(oun)-*after*-N(oun) construction, as in *day after day* (see, for example, Matsuyama 2004, Beck & von Stechow 2006, or Jackendoff 2008), to my knowledge, nothing has been said about combinations of the two, as in *Jil pulled string after string to get the job*. In such a combination, the two noun slots surrounding the preposition *after* are filled with the bare-singular version of the noun complement of the idiom (*string* in the case of *pull strings*). While the idiom contributes the kind of entity/event ('string'/'string-pulling' in the case of *pull strings*), N-*after*-N contributes the information that there are several instantiations of that kind of entity/event and that these entities/events are subject to a temporal or spatial order, i.e. show temporal or spatial succession.

Since a sentence like *Alex pulled a string*, at least according to the general opinion in the literature, cannot be interpreted idiomatically, existing analyses of semantically

decomposable idioms like *pull strings* require the plural form of the noun (*strings*) to be present for the idiom to be licensed (see, for example, Riehemann 2001, Sailer 2003, or Söhn 2006). As a consequence, the singular form of the noun (*string*) should cause the idiomatic meaning to become unavailable and, hence, exclude a combination of the idiom with the N-*after*-N construction, which only allows for the singular form in its noun slots. So, *pulling string after string* should not be interpretable in the idiomatic sense in (1), which, however, is not only possible but practically unavoidable.¹

- (1) a. The whole idea of the really talented/successful person in their 20's isn't a real thing. Or at the very least, it isn't an actual attainable thing. All those people have people behind them *pulling string after string* for them. Rich parents, well-connected parents, well-connected god parents . . . Whatever it is, I can guarantee you it's there somewhere.²
- b. I had mentally accepted the fact that I wasn't going, but my friends are amazing and continued *pulling string after string* until I ended up in Manchester with a VIP wristband, parking pass, and air-conditioned living quarters, all at zero cost to me.³

In this chapter, I will present an explicit account of why *pull strings* can be interpreted idiomatically within the N-*after*-N construction. The structure of this chapter is as follows: In Section 6.2, I will present empirical properties of the N-*after*-N construction (Section 6.2.1) and my account of the N-*after*-N construction in Head-driven Phrase Structure Grammar (HPSG) (Section 6.2.2). In Section 6.3, I will revisit the account of semantically decomposable idioms like *pull strings* suggested in Chapter 2 of this dissertation (Section 6.3.1), present an updated version of that account in HPSG

¹That a semantically decomposable idiom like *pull strings* does not necessarily require the plural form of its noun to be present for the idiom to be licensed is also evidenced by data like the following:

- (i) Jil pulled {more than one string, not just one string, a string or two, one string after another} to get the job.

²<http://doiwakeorsleep.tumblr.com/post/46393612094/25-things-i-learned-in-the-first-half-of-my-20s> (13 Nov 2016)

³<http://mmmellifluous.wordpress.com/2010/06/21/the-bonnaroo-that-almost-wasnt> (13 Nov 2016)

(Section 6.3.2), and combine it with my account of the N-*after*-N construction. In Section 6.4, I will conclude the chapter.

6.2 The N-*after*-N construction

In this section, as just announced in the introduction, I will present empirical properties of the N-*after*-N construction (Section 6.2.1) and my account (Section 6.2.2).

6.2.1 Empirical properties of N-*after*-N

The N-*after*-N construction is exemplified by *day after day* in the sentence in (2), where it occurs in subject position.

- (2) *Day after day* goes by, mostly without us even taking any notice.

The N-*after*-N construction can be considered a subtype of the N-P-N construction (cf. Jackendoff 2008). The two main reasons are that i) N-*after*-N and N-P-N only differ in terms of the P(reposition)-slot (whereas in N-*after*-N the preposition is specified, in N-P-N it is not) and ii) N-*after*-N shares several other properties with N-P-N, which also holds for N-*by*-N, N-*for*-N, N-(*up*)*on*-N and N-*to*-N, as well as, to a smaller degree, for idioms like *hand over fist* (\approx ‘fast’) and *tongue in cheek* (\approx ‘ironic(ally)’), all of which can also be considered subtypes of N-P-N (cf. Jackendoff 2008 again).

In this section and chapter, I will solely focus on N-*after*-N, though. I will hence not discuss any of the other members of the family of N-P-N constructions or their inheritance hierarchy but specify N-*after*-N’s properties explicitly, also those that it might actually inherit from N-P-N. What I would like to mention about the family of N-P-N constructions, however, is that, just like idioms, they occur in many languages, and we most probably use them far more often than we think (cf. Jackendoff 2008: 8).

The following is a non-exhaustive summary of the empirical properties of N-*after*-N. This summary is mostly based on Matsuyama (2004) and Jackendoff (2008). I will begin with the more form-related properties of N-*after*-N and then move on to the more meaning-related properties. Within the description of any of those properties, I will also move from more form-related aspects to more meaning-related aspects.

First, the choice of noun to be inserted in the two N-slots of N-*after*-N is free to a certain extent, making N-*after*-N quite lexically flexible and productive in those slots. However, there are several idiosyncratic requirements to be met: The two noun slots must be filled with one and the same noun (vs. two different nouns), see (3); that noun must be a count noun (vs. a non-count noun) or at least be interpreted as such, see (4); it must be in the singular form (vs. in the plural form), see (5), and it must be bare (vs. accompanied by a determiner), see (6).

- (3) a. Alex watched *car after car* pass by. ($N_1 = N_2$)
 b. * Alex watched *car after bus* pass by. ($N_1 \neq N_2$)
- (4) a. Alex put *grape after grape* in her salad. (N = count)
 b. * Alex put *salt after salt* in her salad. (N \neq count)
- (5) a. Alex read *book after book*. (N = singular)
 b. * Alex read *books after books*. (N \neq singular)
- (6) a. Alex spent *day after day* playing basketball. (N = bare)
 b. * Alex spent *a day after a day* playing basketball. (N \neq bare)

Second, in contrast to the other subtypes of the N-P-N construction, which, except for N-(up)on-N, can only occur in adjunct positions, N-*after*-N can also occur in argument positions.⁴ Otherwise, it would be precluded from taking on the subject and complement positions in the examples in (1) to (6) above. On top of that, N-*after*-N can also fill positions that are confined to noun phrases: It can function as the head (H) of a restrictive relative clause (RRC), see (7a), the complement (Comp) of a preposition (P), see (7b), and the subject (Subj) of a small clause (SC), see (7c).⁵

- (7) a. John asked me [^H *question after question*] [_{RRC} that no teacher had answered].
(N-*after*-N as the head of a restrictive relative clause)
- b. They clattered down . . . , looking [_{PP} [_P into] [^{Comp} *room after room*]].⁶
(N-*after*-N as the complement of a preposition)
- c. We let [_{SC} [^{Subj} *chance after chance*] slip] . . .⁷
(N-*after*-N as the subject of a small clause)

In conclusion, N-*after*-N shows the syntactic distribution of a noun phrase. As syntactic distribution is by far the most reliable test for defining an expression's syntactic category, N-*after*-N can clearly be categorized as an NP.

⁴Huddleston & Pullum (2002: 633: fn 15) and Matsuyama (2004: 63: fn. 5) claim that the noun slots of N-*after*-N in adjunct position can only be filled with temporal nouns like *time*, *day*, *week*, *hour*, and *month*, so that an expression like *day after day* can function as an adjunct, whereas an expression like *quarrel after quarrel* cannot. I side with Jackendoff (2008: 9) on this, who finds the following examples perfectly acceptable:

- (i) a. *Quarrel after quarrel*, those two somehow manage to remain friends.
b. That new series of books on imperialist grammar is totally riveting, *volume after volume*.
(Jackendoff 2008's (24c))

⁵Many of the examples in this section have been adapted from Matsuyama (2004), who often took them from literary sources. These original sources are always indicated in individual footnotes.

⁶originally from E. M. Forster's *Howards End*, page 233

⁷originally from E. M. Forster's *Howards End*, page 166

Third, N-*after*-N allows for the insertion of prenominal adjectives. However, just as for the noun slots, there are idiosyncratic requirements to be met: The first occurrence of the noun (N₁) can only be preceded by an adjective if the second occurrence of the noun (N₂) is preceded by the very same adjective, see (8a) to (8d). N₂, in contrast, can be preceded by an adjective while N₁ is not, see (8c).

- (8) a. *bad day after bad day* (N₁ and N₂ are preceded by the same adjective.)
 b. **bad day after awful day* (N₁ and N₂ are preceded by different adjectives.)
 c. *day after bad day* (Only N₂ is preceded by an adjective.)
 d. **bad day after day* (Only N₁ is preceded by an adjective.)

If only N₂ is preceded by an adjective, the meaning of that adjective nonetheless applies to all the entities/events referred to (usually three or more). Therefore, there is no truth-conditional meaning difference between (8a) and (8c).

When N-*after*-N occurs in argument position, it also allows for postnominal complements and modifiers. Here, again, N₁ can only be followed by a complement or modifier if N₂ is followed by it, too, see (9a) to (9d). N₂, in contrast, can be followed by a complement or modifier while N₁ is not, see (9c).

- (9) a. *book about syntax after book about syntax* (same complement.)
 b. **book about syntax after book about semantics* (different complements.)
 c. *book after book about syntax* (Only N₂ is followed by a complement.)
 d. **book about syntax after book* (Only N₁ is followed by a complement.)

Fourth, even though N-*after*-N allows for prenominal adjectives, it still shows a certain degree of syntactic fixedness. In contrast to non-constructive expressions like *one N after another* (which is semantically very similar to N-*after*-N), it cannot be split apart by syntactic operations like extraposition, compare (10) to (11).⁸

⁸The data in (10) to (16) have been adapted from Matsuyama (2004)'s (3), (15), (16), (30), (17), and (41).

- (10) a. *One man after another* passed by. (canonical *one N after another*)
 b. *One man* passed by *after another*. (extraposition of *after another*)
- (11) a. *Man after man* passed by. (canonical N-*after-N*)
 b. **Man* passed by *after man*. (extraposition of *after-N*)

Fifth, N-*after-N* shows a syntax-semantics mismatch: It is syntactically singular but semantically plural. The syntactic singularity of N-*after-N* is indicated by the fact that it shows 3rd-person-singular subject-verb agreement, see (12) as well as (2) above.

- (12) a. *Study after study* {reveals, *reveal} the dangers of lightly trafficked streets
 ...
 b. His head was whirring and *picture after picture* {was, *were} forming and blurring ...⁹

The arguments for the semantic plurality of N-*after-N* consist in the semantic parallels between N-*after-N* and bare plural nouns. As the following examples show, N-*after-N* – just like bare plural nouns – is unbounded, see (13), can only be taken up by a plural pronoun in anaphoric relations (Pronouns rely on the meaning, not the form, of the expressions they apply to.), see (14), and allows for individualization of the entities referred to, see (15).¹⁰

⁹originally from F. S. Fitzgerald's *This Side of Paradise*, page 174

¹⁰Contrary to Matsuyama (2004: 64)'s claim, it is not at all the case that in (15), Matsuyama's (17), "each of the repeated nouns in *man after man* is a separate entity in the event represented by the whole sentence." If that were the case, then for the sentence in (15) to be true, there would have to be exactly two men involved in the event(s) described by that sentence. The plural quantification that comes with N-*after-N* is non-specific, though. And if there is anything to be said about the number of entities/events that N-*after-N* usually refers to, then it is that this number is usually (much) higher than two.

- (13) a. John ate {*apple after apple*, apples, #the/two apples, #the/an apple} for an hour.
({N-*after*-N, bare plural, non-bare plural, singular} + unboundedness marker)
- b. John ate {#*apple after apple*, #apples, the/two apples, the/an apple} in an hour.
({N-*after*-N, bare plural, non-bare plural, singular} + boundedness marker)
- (14) a. Words and images came tripping to my finger ends, and as I thought out
{*sentence after sentence*, sentences, *a sentence}, I wrote them on my braille slate.¹¹
({N-*after*-N, bare plural, singular} + plural anaphoric pronoun)
- b. Words and images came tripping to my finger ends, and as I thought out
{**sentence after sentence*, *sentences, a sentence}, I wrote it on my braille slate.
({N-*after*-N, bare plural, singular} + singular anaphoric pronoun)
- (15) Rosalind had been disappointed in {*man after man*, men, #a man} as individuals,
but she had great faith in man as a sex.¹²
({N-*after*-N, bare plural, singular} + indication of internal semantic structure)

Because of these parallels between N-*after*-N and bare plurals, N-*after*-N can also function as the subject of collective verbs like *collide* or *assemble*, which only accept subjects that denote a group of distinguishable entities, see (16).

- (16) a. {*Car after car*, Cars, #A car} collided on the highway.
({N-*after*-N, bare plural, singular} + collective verb)
- b. {*Man after man*, Men, #A man} assembled in the meeting room.
({N-*after*-N, bare plural, singular} + collective verb)

¹¹originally from H. Keller's *The Story of My Life*, page 48

¹²originally from F. S. Fitzgerald's *This Side of Paradise*, page 148

It makes perfect sense that N-*after*-N is semantically plural, of course: Logically, whenever it is the case that *man after man* has passed, it is also the case that *men* have passed. That the inverse does not hold (It is not the case that whenever *men* have passed, *man after man* has passed.) clearly shows that N-*after*-N provides more information than a bare plural, i.e. it is semantically more specific. Not only does it denote a plurality of distinguishable entities and/or events, it also orders these temporally and/or spatially, see (17).

- (17) a. *Skydiver after skydiver* jumped out of the big cargo plane's hatchway.
 'First, one skydiver jumped,
 then another skydiver jumped,
 then another skydiver jumped,
 ...'
- b. *Telephone pole after telephone pole* stretched along the road toward the horizon.¹³
 'There was a telephone pole,
 not far from it was another telephone pole,
 not far from that one was another telephone pole,
 ...'

N-*after*-N indicates that the skydivers did not all jump at once, but one after the other, and it emphasizes – together with *stretched along the road toward the horizon* – that the telephone poles were not all in the same place, but formed a long line.

Sixth, the preposition *after* and the second N-slot of the N-*after*-N construction, i.e. *after*-N, can be iterated to emphasize the multitude of the entities referred to:

- (18) *Day after day after day* went by, but I never found the courage to talk to her.
 (iteration of *after*-N)

¹³Jackendoff (2008)'s (24b)

6.2.2 My account of N-*after*-N

The literature already contains a few suggestions on how to analyze N-*after*-N or its counterparts in other languages, like Japanese or Dutch; see, for example, Matsuyama (2004) and Jackendoff (2008) for proposals in the realm of Construction Grammar (CxG), Poss (2010) for an analysis in Sign-Based Construction Grammar (SBCG), and Kudo (2013) and Haik (2013) for a Minimalist approach (one a movement analysis, the other a compounding approach).

My own analysis of N-*after*-N will be laid down in a version of Head-driven Phrase Structure Grammar (HPSG, Pollard & Sag 1994), the framework from which SBCG (Boas & Sag 2012) has evolved as a constructional variant. Due to this strong connection between the two frameworks, I will present Poss (2010)'s SBCG account of N-P-N and N-*na*-N, the latter being the Dutch equivalent of N-*after*-N, before going into my own analysis. Poss (2010) defines N-P-N in terms of the attribute-value matrix (AVM) in Figure 6.1.

$$\begin{array}{c}
 \text{NPN-}cxt \Rightarrow \left[\begin{array}{l}
 \text{MTR} \left[\begin{array}{l}
 \text{SYN} \left[\begin{array}{l}
 \text{CAT} \left[\begin{array}{l}
 \textit{noun} \\
 \text{COUNT} - \\
 \text{MRKG} \textit{ unmk}
 \end{array} \right] \\
 \text{SEM} \textit{ cx-sem}
 \end{array} \right] \\
 \text{DTRS} \left\langle \begin{array}{l}
 \boxed{\text{I}} \left[\begin{array}{l}
 \text{SYN} \left[\begin{array}{l}
 \text{CAT} \left[\begin{array}{l}
 \textit{noun} \\
 \text{COUNT} + \\
 \text{MRKG} \textit{ unmk} \\
 \text{FORM} \textit{ phon} \\
 \text{AGR} \textit{ 3rd sing}
 \end{array} \right] \\
 \text{SEM} [\dots]
 \end{array} \right] \\
 \text{SEM} [\dots]
 \end{array} \right] \right\rangle, \left[\begin{array}{l}
 \textit{prep} \\
 \text{SEM} [\dots]
 \end{array} \right], \boxed{\text{I}} \right\rangle
 \end{array} \right.
 \end{array}
 \end{array}$$

Figure 6.1: The N-P-N construction (Poss 2010: 50: (42))

According to Poss (2010: 50: (42)), the N-P-N construction (*NPN-cxt*) consists of a non-count (COUNT –) nominal (CAtegory *noun*) mother (MTR) and three daughters (DTRS): a preposition (*prep*) and two identical determinerless count (COUNT +) nouns with 3rd-person-singular agreement (AGR *3rd sing*) that surround the preposition with regard to linear order. The identity of the two nouns (the entire signs) is indicated by the tag $\boxed{1}$ in front of the first daughter and in (the) place of the third daughter.

The semantic representation (SEM) value of (the mother of) the N-P-N construction is not determined. This kind of information is contributed by the sub-constructions, which Poss describes as “a family of productive, formally similar constructions that (often) only differ with respect to their semantic content.” In some cases, the sub-constructions also indicate the paradigm of possible second-daughter prepositions and whether or not the entire N-P-N is only licensed if selected by the preposition *van* (*to*).

As the aim of this chapter is to analyze the N-*after*-N construction, let us look at how Poss (2010) describes the Dutch equivalent N-*na*-N:

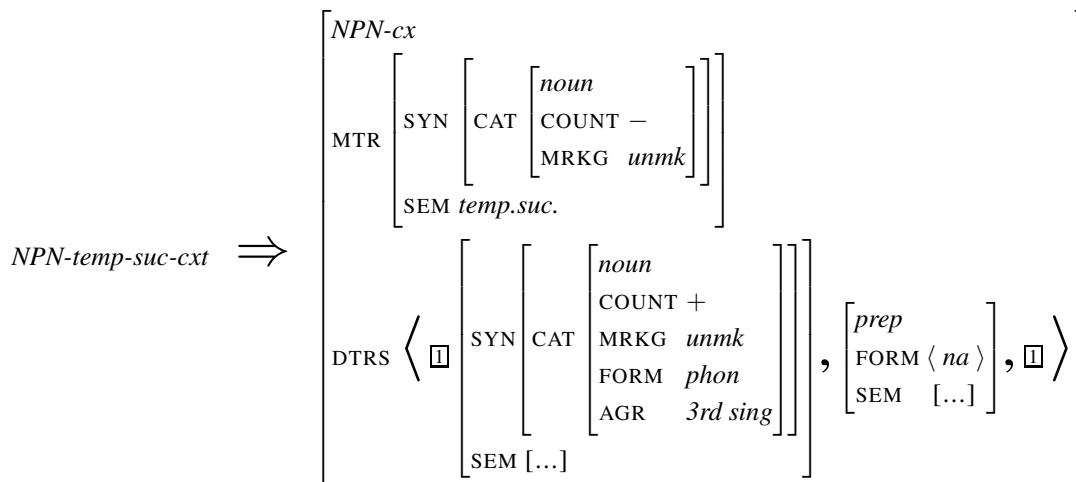


Figure 6.2: N-*na*-N construction (Poss 2010: 50-51)

As can be seen, the only difference between N-P-N and N-*na*-N is that the SEM-value changes from *cx-sem* to *temp.suc.* and that the FORM-value of the preposition is specified in N-*na*-N. Poss (2010) does not provide any other specifics on N-*na*-N.

My representation of N-*after*-N builds on Poss (2010)'s description of the Dutch equivalent N-*na*-N but differs in some details, and these differences are not only due to (notational) discrepancies between SBCG and HPSG. I will, among other things, elaborate a bit on the semantic representation. The version of HPSG that my account is formulated in allows for phrasal lexical entries and makes use of λ -calculus as a semantic representation language, see Figure 6.3.

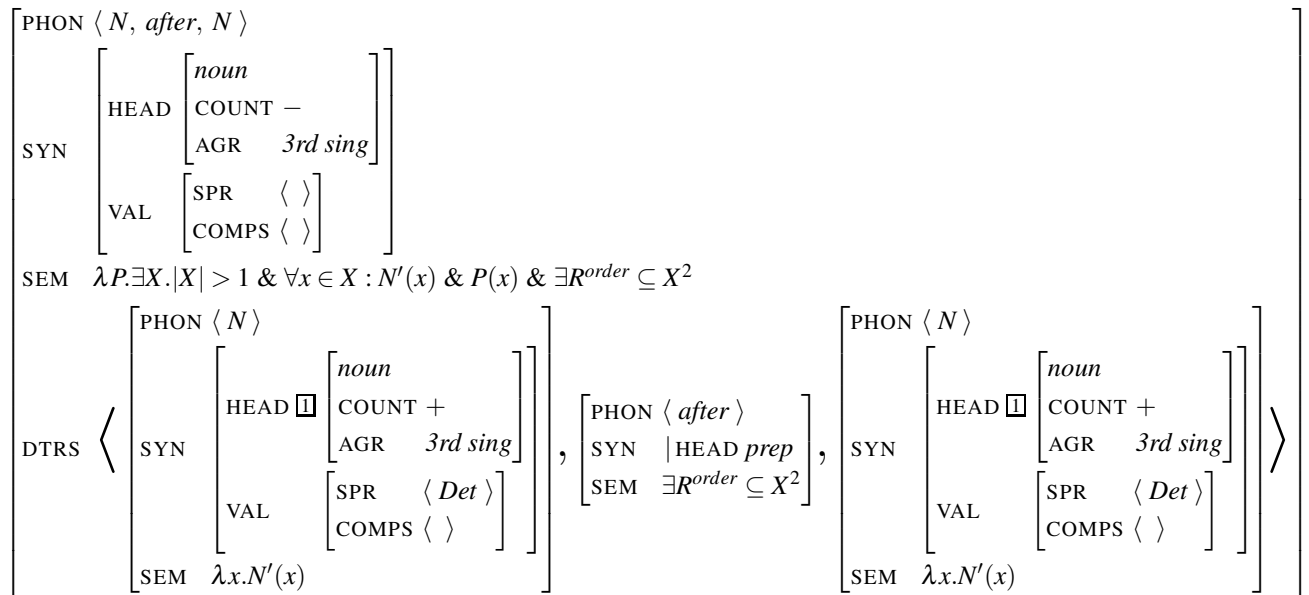


Figure 6.3: N-*after*-N construction (this dissertation)

Just as in the previous two figures, N-*after*-N in Figure 6.3 consists of a mother and three daughters.¹⁴ The mother is a fully-saturated 3rd-person-singular non-count NP (indicated by SPR $\langle \rangle$ and COMPS $\langle \rangle$ in the VALence-value and AGR *3rd sing*, COUNT $-$, and the type *noun* in the HEAD-value, which compares to the CATEgory-value in Poss 2010). The *N* in the phonological representation (PHON) is a variable over strings. I chose *N* over other forms of tags usually employed in HPSG for mnemonic reasons. The use of this variable is, of course, not intended to state that there is only one token of the *N* in the phonology, but rather that each token that *N* will be instantiated to includes the phonological representation of the very same noun.

Moving on to the daughters, there are two 3rd-person-singular count nouns and the preposition *after* (PHON $\langle \textit{after} \rangle$). Each of the two nouns requires a determiner as its specifier (SPR $\langle \textit{Det} \rangle$). The N-*after*-N construction, however, forces its nominal daughters to stay determinerless and also does not allow for any determiners itself (indicated by the already mentioned empty SPR-list of the mother). Semantically, the two nominal daughters contribute the predicate $\lambda x.N'(x)$, and *after* contributes a relation that orders the entities denoted by that predicate: $\exists R_{order}.R \subseteq X^2$. The general strategy is to push as much of the overall meaning as (reasonably) possible into the individual words¹⁵ of the construction, but the condition that the quantity of these entities must exceed one ($\exists X. |X| > 1 \ \& \ \forall x \in X : N'(x)$) is contributed by the N-*after*-N construction as a whole, as it cannot reasonably be attributed to any of the daughter nodes – in particular, it cannot easily be argued that it is also part of the SEM-value of the preposition.¹⁶

¹⁴As we saw in (8), (9), and (18), the nouns in N-*after*-N can have modifiers and/or complements, and *after*-N can be iterated. I will leave the iteration of *after*-N aside in the formal analysis presented in this chapter. For modifiers and/or complements of the nouns, I will not provide a concrete representation but will attempt to make my analysis (more or less) compatible with them.

¹⁵Here and in the rest of this chapter, I use the term *word* in a pretheoretical sense and, for the sake of simplicity, do not distinguish between *lexeme* and *word* as would be typical in HPSG.

¹⁶As I am exclusively concerned with N-*after*-N here, I will refrain from specifying what information comes with N-*after*-N proper and what is due to the supertype N-P-N. Nonetheless, I assume that Poss (2010)'s supertype-subtype relationship between these constructions is on the right track.

Figure 6.3 is supposed to license fully literal expressions, like *book after book*, as well as expressions containing idiomatic nouns, like *string after string*. In contrast to Poss (2010), I do not tag the two nominal daughters as a whole, as identical tags express token identity in HPSG, but there are clearly two Ns in N-*after*-N, not just one. Moreover, it is possible that only the second noun shows modifiers and/or complements – recall the data in (8c) and (9c). In an analysis of (9c), for instance, only the second noun would have a complement on its COMPS-list, while the COMPS-list of the first noun would be empty. Poss (2010)’s account would exclude those structures altogether. That is why I do not stipulate complete identity, especially not token-identity, between the noun constituents of N-*after*-N but only tag their HEAD-values: No matter what the nominal daughters look like overall, their heads will always be 3rd-person-singular count nouns.

6.3 Semantically decomposable idioms

In this section, I will revisit the account of semantically decomposable idioms like *pull strings* suggested in Chapter 2 of this dissertation (Section 6.3.1), present an updated version of that account in HPSG and combine it with my account of the N-*after*-N construction (Section 6.3.2).

6.3.1 Account of SDIs in Webelhuth et al. (2019)

On the basis of data from passivization, raising, preposing, *wh*-movement, VP-ellipsis, pronominalization, and relative clauses, Chapter 2 of this dissertation presented the following lexical entries for the verbal and the nominal part of the idiom *pull strings*:¹⁷

¹⁷In Chapter 2, the lexical entries for *pull strings* were numbered (77) and (78).

(19) Lexical entry of idiomatic *pull*:

SYN: [_V pull-]

SEM: $pull_{id}'$

Co-occurrence constraint: Idiomatic *pull* is licensed iff (after a discourse update) the variable in the second argument position of its SEM-value $pull_{id}'$ is predicated over by the SEM-value of idiomatic *strings*, i.e. $strings_{id}'$.

(20) Lexical entry of idiomatic *strings*:

SYN: [_N strings]

SEM: $strings_{id}'$

Co-occurrence constraint: Idiomatic *strings* is licensed iff

- (i) its SEM-value $strings_{id}'$ predicates over the variable in the second argument position of the SEM-value of idiomatic *pull*, i.e. $pull_{id}'$ or
- (ii) $strings_{id}'$ is already present and salient in the discourse.

In view of the focus of this chapter, we can ignore condition (ii) of the co-occurrence constraint in the lexical entry of idiomatic *strings* in (20). What we need to recall, however, is that it follows from the co-occurrence constraint in (19) that idiomatic *pull* must occur in the linguistic context of idiomatic *strings* because the second argument of *pull*'s SEM-value $pull_{id}'$ must be predicated over by the SEM-value $strings_{id}'$ (which can only be introduced into the overall semantic representation by idiomatic *strings*)¹⁸ and that it conversely follows from the co-occurrence constraint in (20) that idiomatic *strings* must occur in a linguistic context containing idiomatic *pull*, because the SEM-value of *strings* (i.e. $strings_{id}'$) must predicate over the second argument of $pull_{id}'$ (which can only be contributed by idiomatic *pull*).

Recall further that it was mentioned twice in Chapter 2 (in footnote 17 and 28) that the specification of the SYN-value as [_N strings] (and the SEM-value as $strings_{id}'$) was a simplification, as idiomatic *strings* can also occur in its morphologically and

¹⁸Just like condition (ii) of the co-occurrence constraint in the lexical entry of idiomatic *strings* in (20), we can also ignore the proviso “after a discourse update” (which allows for cross-sentential anaphora) for our current purposes.

syntactically singular form, for example in the N-*after*-N construction, as in (1) above, repeated for convenience in (21).

- (21) a. The whole idea of the really talented/successful person in their 20's isn't a real thing. Or at the very least, it isn't an actual attainable thing. All those people have people behind them *pulling string after string* for them. Rich parents, well-connected parents, well-connected god parents . . . Whatever it is, I can guarantee you it's there somewhere.¹⁹
- b. I had mentally accepted the fact that I wasn't going, but my friends are amazing and continued *pulling string after string* until I ended up in Manchester with a VIP wristband, parking pass, and air-conditioned living quarters, all at zero cost to me.²⁰

The fact that the nominal complement of *pull strings* can occur in the morphosyntactic singular is clear evidence that the SYN-value in the lexical entry in (20) cannot be specified as [_N strings] (and the SEM-value cannot be specified as *strings_{id'}*).²¹ This is in stark contrast with standard accounts of *pull strings*, which state that idiomatic *pull* requires the morphosyntactic plural *strings* and hence would not allow for the idiom to occur in the N-*after*-N construction.

¹⁹<http://doiwakeorsleep.tumblr.com/post/46393612094/25-things-i-learned-in-the-first-half-of-my-20s> (13 Nov 2016)

²⁰<http://mmmellifluous.wordpress.com/2010/06/21/the-bonnaroo-that-almost-wasnt> (13 Nov 2016)

²¹Considering that citation forms should not contain any more material than the lexical entries they belong to, the morphological plural should not be part of the citation form of *pull strings*, either. I will continue to use the citation form *pull strings*, though, as the citation form *pull string* would imply that the idiom can be used in this exact way.

6.3.2 My account of SDIs (in N-after-N)

On the basis of what we observed in the previous section, the SYN- and SEM-value of *strings* cannot be specified as plural. If we take these plural specifications out and also ignore condition (ii) in (20), we get the lexical entries in (22) and (23).²²

(22) Lexical entry of idiomatic *pull*:

SYN: [_V pull-]

SEM: $pull_{id}'$

Co-occurrence constraint: Idiomatic *pull* is licensed iff the variable in the second argument position of its SEM-value $pull_{id}'$ is predicated over by the SEM-value $string_{id}'$.

(23) Lexical entry of idiomatic *string*:

SYN: [_N string-]

SEM: $string_{id}'$

Co-occurrence constraint: Idiomatic *string* is licensed iff its SEM-value predicates over the variable in the second argument position of the SEM-value of idiomatic *pull*, i.e. $pull_{id}'$.

However, these new lexical entries would license sentences like *Someone pulled a string (for someone)*, which are often thought to be excluded or at least fairly marked, and considerably worse than standard occurrences of *pull strings* in out-of-the-blue contexts. A cursory internet search as well as talk to some informants, casts some serious doubt on the generality and correctness of this claim, though, as one can easily find idiomatically interpreted sentences of the kind *Someone pulled a string (for someone)*, see (24).

²²The hyphen in [_N string-] allows for but does not require plural inflection.

- (24) a. When I got the job, I thought to myself: “Someone upstairs finally *pulled a string* for me.”²³
- b. A spot at one of the independent mech technician academies came open, and another friend (from school, one who hated the deceased would-be-Rabbi as much as I did) *pulled a string* for me. It’s good to be connected.²⁴
- c. Winchester made the claw bolt again in about 1991, but didn’t get to the masses until a few years after. I was dying to get my hands on one, and the outdoor writer Joe Coogan *pulled a string* for me and I had one waiting for me at the old Blairs in Williamport.²⁵
- d. Think of all those who helped you in your journey. Who encouraged you? Who gave you sage advice? Who loaned you money? Who *pulled a string* for you? Who gave you a car? Who refused to let you give up on your dreams? Now it’s your turn. It’s time for you to pay back on your debt by investing in others.²⁶
- e. I *pulled a string* for you with the judge behind the scenes. The best I could do was the four years ... but I got you released a year early. I called in a debt I was owed once.²⁷
- f. The waiting list is crazy, but thank goodness we knew an old friend who *pulled a string* for us.²⁸

²³<http://ultraphrenia.com/2016/10/02/a-cigarette-break-behind-heavens-gate> (13 Nov 2016)

²⁴<http://mwomercs.com/forums/topic/141295-this-is-my-wrench> (13 Nov 2016)

²⁵<http://www.huntingpa.com/forums/30-firearm-forum/108021-whats-value-1956-win-mod-70-featherweight.html?perpage=500> (13 Nov 2016)

²⁶<http://www.randallhartman.com/1741-2> (13 Nov 2016)

²⁷<http://wr.theyoungriiderstv.net/Ellie/UMH.html> (13 Nov 2016)

²⁸<https://cancercompass.com/message-board/message/all,35911,0.htm> (13 Nov 2016)

- g. When we went in we were surprised that we were actually put in the first row! We think the ticket lady *pulled a string* for us, very sweet. ²⁹
- h. We stayed at the Encore Tower Suites. My friend Michael Shulman *pulled a string* for us and got us a deal. ³⁰
- i. Well, ... it is the only time I can remember my father actually ever *pulling a string* for me. ... And *the string that my father pulled* was to go to the then Under Secretary of State for War and arrange that I should join the army immediately after leaving school. ... And the reason why he *pulled this string* was ‘The sooner you are started, the sooner you are finished’, and I think it did actually work out quite well. ³¹
- j. They don’t give scholarships away. Maybe if you are O.J. Mayo, you’ll have someone *pulling a string* for you to help you if you are one credit shy, but that only happens to the top 100 kids in the country. ³²

For the sake of this chapter, I will adopt the generalization from the literature that idiomatically interpreted sentences of the kind *Someone pulled a string (for someone)* are excluded or at least fairly marked and leave the data situation as a subject for future research. To render such sentences impossible within my analysis, I will add a purely semantic condition to the co-occurrence constraints, namely that idiomatic *pull* requires a plurality of strings at the semantic representation level. I will model this semantic plurality (in a somewhat simplistic fashion) via a set X with a cardinality of more than one ($\exists X. |X| > 1$), just as I did in the lexical entry of *N-after-N* in Figure 6.3 above. Before I do that, however, consider Figure 6.4 and Figure 6.5 for HPSG translations of

²⁹<http://mymarineandme.blogspot.de/2011/06/vacation-last-part.html> (13 Nov 2016)

³⁰http://oneandmanyjimmyjames.blogspot.de/2009_06_01_archive.html (13 Nov 2016)

³¹<http://sounds.bl.uk/related-content/TRANSCRIPTS/021T-C0409X0105XX-0000A0.pdf> (13 Nov 16)

³²<http://www.rightfitsports.com/miller> (13 Nov 2016)

the lexical entries in (22) and (23) without the co-occurrence constraints but enriched with some VALence information and a more detailed (eta-equivalent: $=_{\eta}$) SEM-value:

$$\left[\begin{array}{l} \text{PHON } \langle \textit{pull} \rangle \\ \text{SYN } \left[\begin{array}{l} \text{HEAD } \textit{verb} \\ \text{VAL } \left[\begin{array}{l} \text{SPR } \langle \text{NP} \rangle \\ \text{COMPS } \langle \text{NP} \rangle \end{array} \right] \end{array} \right] \\ \text{SEM } \textit{pull}_{id}' =_{\eta} \lambda y \lambda z. \textit{pull}_{id}'(z, y) \end{array} \right]$$

Figure 6.4: idiomatic *pull* in HPSG

Idiomatic *pull* requires two semantic arguments: y and z . These two semantic arguments are linked to *pull*'s two syntactic arguments: y to the NP-complement and z to the NP-specifier.

$$\left[\begin{array}{l} \text{PHON } \langle \textit{string} \rangle \\ \text{SYN } \left[\begin{array}{l} \text{HEAD } \textit{noun} \\ \text{VAL } \left[\begin{array}{l} \text{SPR } \langle \text{Det} \rangle \\ \text{COMPS } \langle \rangle \end{array} \right] \end{array} \right] \\ \text{SEM } \textit{string}_{id}' =_{\eta} \lambda x. \textit{string}_{id}'(x) \end{array} \right]$$

Figure 6.5: idiomatic *string* in HPSG

Idiomatic *string* requires only one semantic argument, x , which is the bound variable of the meaning of the Det-specifier. To add the co-occurrence restrictions (including the semantic plurality constraint on *string*), two possibilities suggest themselves: Either, in the spirit of Chapter 2, the co-occurrence restrictions on the semantic representations of the idiomatic words are checked at the top node of the structure, or

they are enforced via selectional restrictions of the words *pull* and *string*. I will explore the top-node approach in this chapter. Nonetheless, I provide a tiny glimpse into the selectional approach in Figure 6.6, where, in contrast to Figure 6.4, *pull* requires its complement-NP to be semantically plural and to contain the semantic constant $string_{id}'$.

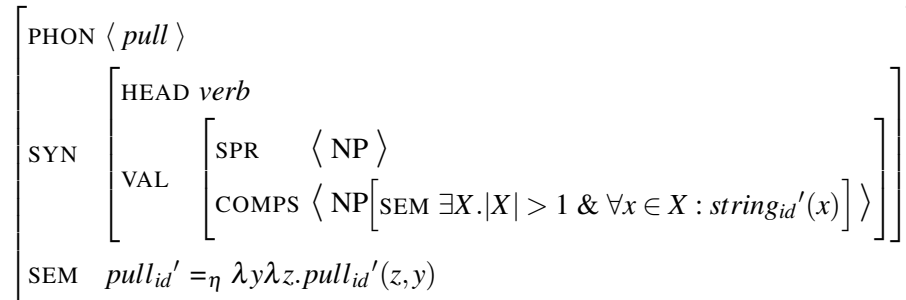


Figure 6.6: idiomatic *pull* in the selectional approach

I will now go into the top-node approach and begin with the representation of the bare-plural phrase *strings* in Figure 6.7, into which I have already incorporated the features COUNT and AGR, which will be relevant for the combination with N-*after*-N later on.

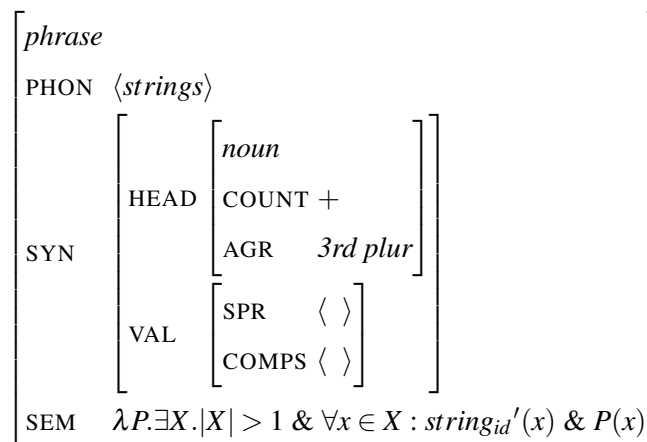
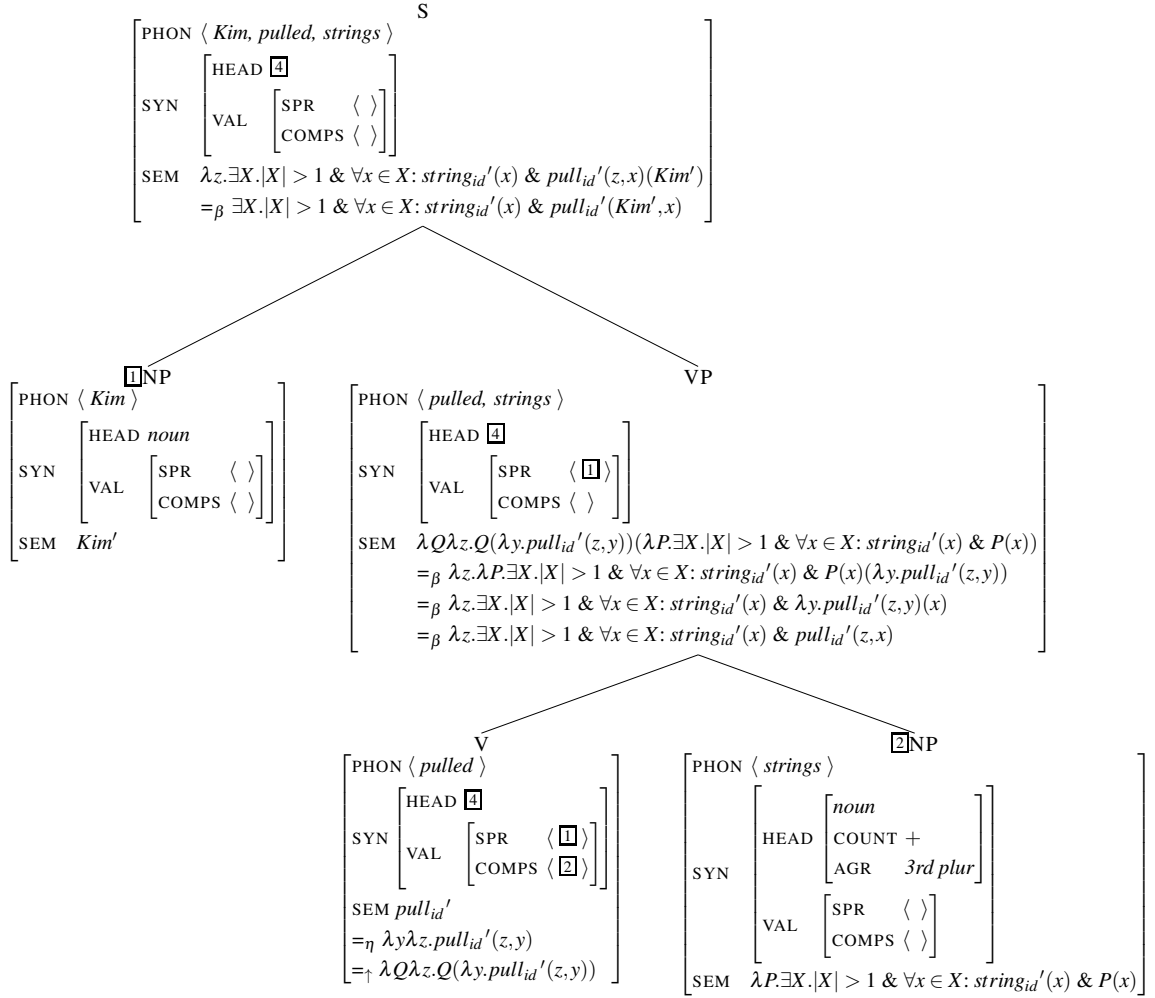


Figure 6.7: idiomatic bare-plural *strings*

We get to the (bare) plural of idiomatic *string* via a standard inflectional rule along the lines of Sag et al. (2003: 254), which takes *string* as input and maps it to its morphological plural *strings*. As *strings* is a bare plural in this case, the SPR-list is empty. The rule also changes the predicate $\lambda x.string_{id}'(x)$ to its pluralized version. In my (toy) plural semantics, this yields a generalized quantifier expressing the required semantic plurality ('more than one string'): $\lambda P.\exists X. |X| > 1 \ \& \ \forall x \in X : string_{id}'(x) \ \& \ P(x)$.

As for the type mismatch between ordinary predicates and a quantifier in object position, there are various ways of resolving the type conflict. The resolution strategy envisaged here is to employ a version of Flexible Montague Grammar (Hendriks 1993), incorporated into HPSG by Sailer (2003). Specifically, entity-type arguments of predicates may be raised to the type of generalized quantifier. Let us now look at a simple sentence like *Kim pulled strings*.

Figure 6.8: *Kim pulled strings*.

As far as the syntax of the sentence is concerned, we have a standard monotransitive structure. The idiomatic verb *pull* (here in the preterite form *pulled*) selects for and finds its complement (the idiomatic bare-plural NP *strings*) to the right and a specifier/subject (here the NP *Kim*) to the left, which results in a fully-saturated phrase: S.

As far as the semantics is concerned, the bare plural *strings* is as in Figure 6.7, i.e. it denotes a generalized quantifier expressing a plurality of strings. To be able to combine with idiomatic *pull*, which denotes an ordinary binary relation between entities,

we raise ($=_{\uparrow}$) its outer (i.e. internal) argument to the type of generalized quantifier. We obtain the semantics of the VP via standard functional application. After a series of β -reductions that are completely routine (for details, see Figure 6.8), we get the property of pulling more than one string. To acquire to the meaning of the entire sentence, this VP-meaning is applied to the meaning of the subject-NP, which results in the desired and intuitively correct truth-conditions for the sentence, namely that there are at least two idiomatic strings that Kim idiomatically pulled. The co-occurrence constraints of the idiom parts are also met. The argument of *strings* is predicated over by idiomatic *pull_{id}'*, and the internal argument of *pull* is predicated over by *string_{id}'*.

Let us now turn to a passive version, more specifically an impersonal passive, i.e. one without an explicit *by*-agent. In HPSG, the passivization of a transitive structure can be obtained via a lexical rule. In Figure 6.9, we see the application of such a passive lexical rule to idiomatic *pull* (looking for idiomatic *strings* as its NP-complement).

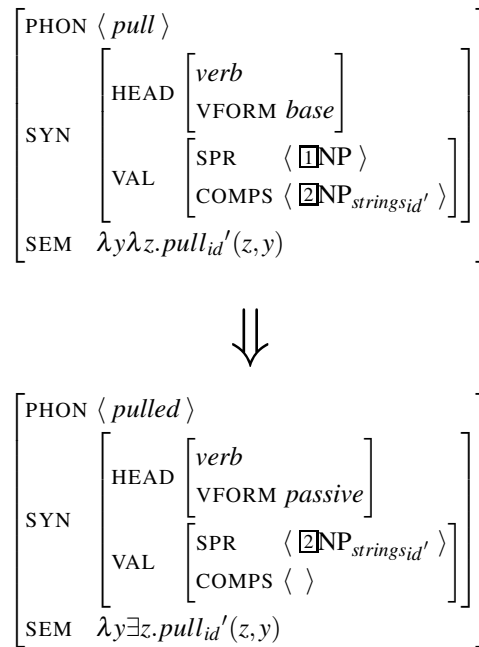


Figure 6.9: passive lexical rule applied to idiomatic *pull*

Phonologically (and morphologically), *pull* changes to *pulled*. Syntactically, *pull*'s verbform (VFORM) changes from *base* to *passive*, and the element on *pull*'s SPR-list ($\boxed{1}$ NP) is replaced by the element on *pull*'s COMPS-list ($\boxed{2}$ NP). Since this is the rule for an impersonal passive, the semantic reflex is that of existentially closing off the external argument of *pull*: λz turns into $\exists z$.

Let us now consider the sentence *Strings were pulled*, see Figure 6.10. The passive participle *pulled* ($\boxed{3}$ VP) is identical to the output in Figure 6.9 above. The passive auxiliary *were* is semantically an identity function and syntactically a raising verb, i.e. its specifier equals the specifier of its complement *pulled* ($\boxed{2}$ NP). Hence the meaning of the matrix VP ($\boxed{5}$ VP) is solely inherited from its VP-daughter ($\boxed{3}$ VP), and its COMPS-list is empty. The subject *strings* ($\boxed{2}$ NP) is again as in Figure 6.7 and Figure 6.8: a fully-saturated NP with a generalized quantifier as its meaning. When the matrix-VP and its subject combine, the result is a sentence with the passive auxiliary as its head.

like *pull strings* and analyze the sentence *Kim pulled string after string*. I will first show the NP *string after string* and then integrate it into said sentence.

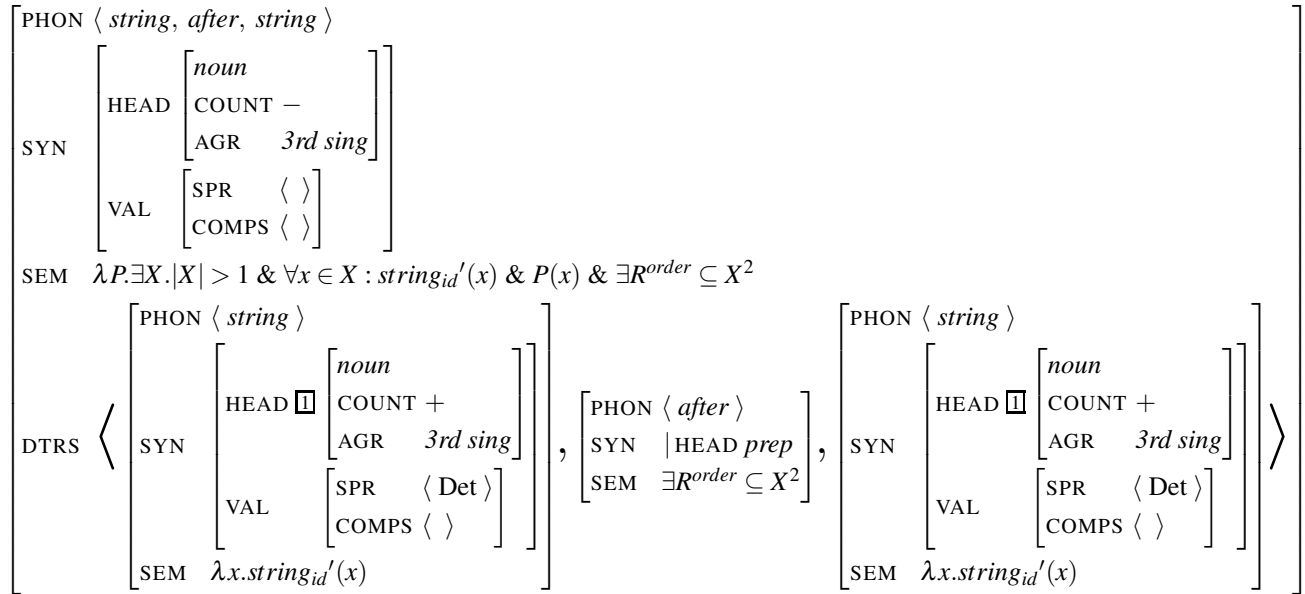


Figure 6.11: *string after string* (this dissertation)

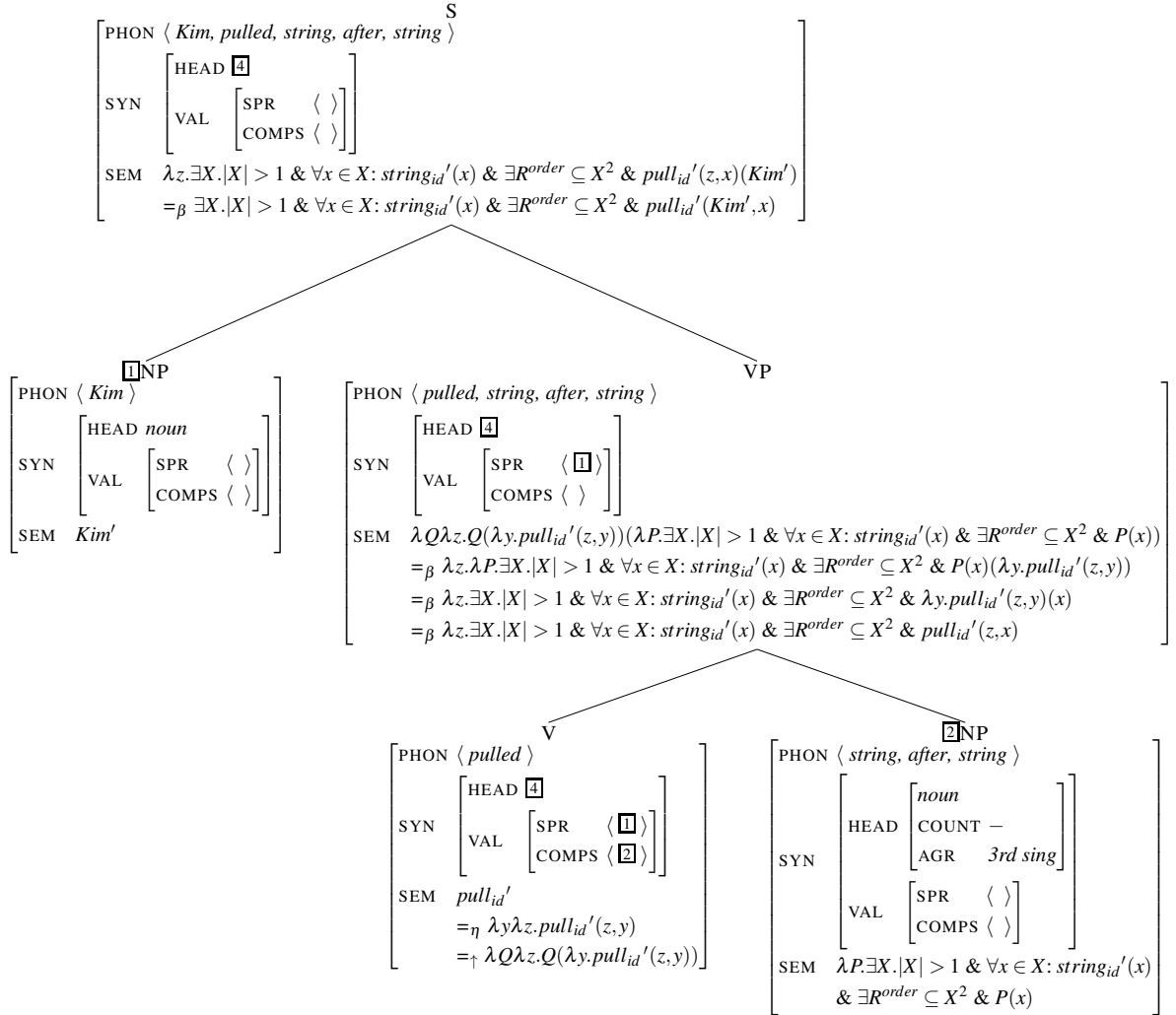
In *string after string*, the PHON- and SEM-values of the two nominal daughters are completely specified. For both daughters, the PHON-value is a list containing only the string *string*, and the SEM-value is $\lambda x. \textit{string}_{id}'(x)$. As expected, the external syntax of the entire construction is that of a non-count singular NP, while its semantics is that of a generalized quantifier expressing that there are at least two (usually three or more) idiomatic strings that are (temporally or spatially) ordered.

Note three things. First, the SEM-value of the idiomatic noun *string* is contributed only once in the final SEM-value of the NP. Second, the idea that the entire NP denotes some kind of quantifier is fully in line with previous work, specifically Jackendoff (2008), who, in a framework relatively close to HPSG in certain regards (mutual constraints on parallel features of a sign), has a vague quantifier MANY, and Kudo (2013),

who also employs a quantifier phrase but with a meaning more closely resembling that of a universal quantifier. Third, the construction is yet another prime example of a syntax-semantics mismatch (see also Chapter 5 of this dissertation). Its external syntax is singular, but its semantics is plural.

Now, we can put everything together and obtain the representation in Figure 6.12, in which idiomatic *pull* selects for the NP *string after string* and a subject. Since the head is *pulled*, the entire structure will also be verbal, and – having found its arguments – the resulting phrase is once again a fully-saturated S. So, the syntactic combination is fully regular once *string after string* has been assembled. In terms of semantics, the calculations are once more given in fully explicit detail in the tree representation. Again, in terms of the external semantics of *string after string*, everything proceeds in the standard mode of semantic combination, and the sentence ends up being true roughly whenever Kim idiomatically pulled at least two strings in succession.

Note also that the co-occurrence constraints on *pull* and *string*, which need to be fulfilled for a successful idiomatic interpretation of this sentence, are indeed satisfied. Idiomatic *pull* is licensed since its internal semantic argument is predicated over by *string_{id}*, and idiomatic *string* is licensed since its SEM-value predicates over the variable in the second argument position of the SEM-value of idiomatic *pull*. On top of that, *pull* has the additional requirement (as argued above) that its NP-complement needs to be semantically plural. This condition is also met. Therefore, the sentence is licensed.

Figure 6.12: *Kim pulled string after string.*

Similarly, a passive version like *String after string is pulled* can be licensed by our grammar fragment. The computation is straightforward again, as the meaning, except for the ordering relation, is the same as for the passive example *Strings were pulled*. This can be seen as follows: The meaning of the VP *is pulled* is identical to the meaning of the VP *were pulled*, and the meaning of the subject-NP *string after string* is (roughly) identical to the meaning of the bare plural NP *strings*. Therefore, the two sentences are predicted to have (roughly) the same meaning.

6.4 Conclusion

In the final chapter of this dissertation, I studied the interaction between *pull strings* and the N-*after*-N construction. First, I showed that this type of idiom does indeed occur in this construction by providing corpus examples. Second, I investigated the properties of the N-*after*-N construction on the basis of the linguistic literature. Then I recalled the account of idioms like *pull strings* given in Chapter 2 and noted that only a few minor adjustments were necessary to make the account there compatible with the observed data. I showed how this account could be formalized in a small grammar fragment that was couched in a variant of Head-driven Phrase Structure Grammar (HPSG) and that combinations of *pull strings* and the N-*after*-N construction can be licensed in the active and passive by employing a regular syntactic and (λ -style) semantic combinatorics. I relegated all idiosyncratic material to the lexicon, either to the word-level lexical entries of the idiom or to the phrasal lexical entry of N-*after*-N. The interaction data between *pull strings* and N-*after*-N represent another piece of evidence that the individual-words account for SDIs is the way to go.

A few questions must be left for future research: First, there appear to be data which show that the nouns in idioms like *pull strings* can also occur in the singular. If so, the semantic plurality constraint could be dropped and *pull strings* would be even more regular. Second, the N-*after*-N data are far more complex when it comes to modifiers or complements of the idiomatic nouns or the iteration of *after*-N. The appropriate permissibility conditions are hard to capture in the grammar fragment at hand and difficult to state in an empirically robust and formally precise way in the first place. Third, it remains to be seen how the co-occurrence constraints can be formulated and checked in a more formal and fully explicit manner within HPSG.

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