

**The literal/non-literal divide  
synchronically and diachronically:  
The lexical semantics of an English posture verb**

Katherine Fraser

PhD programme in Linguistics  
Department of Linguistics and Basque Studies  
University of the Basque Country

THESIS SUPERVISORS

Elena Castroviejo  
University of the Basque Country

Berit Gehrke  
Humboldt University of Berlin

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## Colophon

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*To the memory of my grandfather, Bill Burpeau,  
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# List of Abbreviations

ACT	active
ABS	absolute case
AOR	aorist
CONJ	conjunction
CONT	continuous aspect
COP	copular verb
DET	determiner
DEF	definite number
DIM	diminutive
EMPH	emphasis
F	feminine gender
FOC	focus
FUT	future
GEN	genitive case
IMP	imperative
IMPF	imperfective aspect
INCH	inchoative
INTENS	intensifier
LOC	locative
M	masculine gender
NEG	negation operator
N	neutral gender
NOM	nominative case
NONPAST	non-past tense
OBJ	object
PAST COMPLET	past completative
PER	perspective
PRET	preterite
PL	plural number
POSTPOS	post-positional marker
PRES	present tense
PREP	preposition
PRSP	presupposition
PROG	progressive aspect
PTCP	participle

Q	question operator
REALIS	realis mood
REDUP	reduplication
REFL	reflexive
SG	singular number
TOP	topic

\*For details on how these categories function in the specified languages, please refer to the cited texts.



## Chapter 1

# Introduction

### 1.1 Goal of the thesis

This dissertation's main research goal is to provide an account of the English posture verb *sit*. To achieve this goal, I propose an account of *sit* that covers both synchronic and diachronic behaviour, concentrating on the semantics of this posture verb. My account of *sit* comprises numerous components, including a characterisation of different possible meanings of *sit* and a comparison of this verb to other posture verbs. Regarding the former, in this thesis I explicitly identify a divide between literal and non-literal uses, or non-figurative and figurative uses, a stance not typically taken in the theoretical linguistics literature. Regarding the latter, I additionally challenge assumptions about posture verbs in English, both concerning the patterns of the class as a whole and about *sit*'s properties in relation to *stand* and *lie*. These challenged assumptions are found in accounts which overlook the literal/non-literal divide. Although posture verbs have been examined in the cognitive and typological literature, these verbs, especially in English, have been largely ignored in the formal literature. This thesis is an in-depth study of an English posture verb and is thereby an attempt to fill these gaps.

Due to the understudied nature of posture verbs generally, there are a number of outstanding puzzles to be addressed. This thesis approaches the numerous puzzles by examining properties in the syntax, semantics, and information structure of posture verb sentences. First a synchronic characterisation is completed, followed by a diachronic analysis concerning how the literal use developed into the non-literal use. Just as the diachronic analysis enriches the synchronic picture, the synchronic account informs the diachronic one.

### 1.2 Phenomena under investigation and central issues

This dissertation examines three English posture verbs: *sit*, *stand*, and *lie*. The main object of study concerns two uses of *sit*; the thesis' focus on this one verb is motivated below. The two relevant uses of the posture verbs are the literal use and the non-literal use, which correspond to a transparent, non-figurative use and a non-transparent, figurative use. Sentences illustrating the uses are (1), with *sit* boldfaced.

(1) *Literal and non-literal uses of sit*

- |    |   |             |
|----|---|-------------|
| a. | Marisol <b>sat</b> on the couch.          | LITERAL     |
| b. | The water bottle <b>sat</b> on the couch. | NON-LITERAL |

The minimal pair in (1) contains two different uses of *sit*. In (1-a), the subject referent is a human who is described to be in a sitting position: her buttocks are in contact with the couch and her torso is upright. In contrast, in (1-b), the subject referent is an inanimate object, who is not described to be in a sitting position—nor would it be possible to describe a bottle as being in a sitting position in the real world. I claim in this thesis that uses resembling the one in (1-a), with a subject referent who is in a sitting position, are “literal” uses; while those like the one in (1-b), with a subject referent not in a sitting position, are “non-literal” uses. Note that although the illustrative examples in (1) contain a human and an inanimate entity, the literal/non-literal divide is not delimited in this way: I show in this thesis that other animals with the appropriate anatomy combine with the literal use of *sit*, and that when a sitting position is possible for that animal, it combines with the non-literal use.

The literal and the non-literal uses are also found in the other two posture verbs, *stand* and *lie*. Examples can be seen in (2), with the posture verbs boldfaced.

(2) *Literal and non-literal uses of stand and lie*

- |    |  |             |
|----|--|-------------|
| a. | Marisol { <b>stood</b>   <b>lay</b> } on the couch.          | LITERAL     |
| b. | The water bottle { <b>stood</b>   <b>lay</b> } on the couch. | NON-LITERAL |

The minimal pairs in (2) contain the literal and non-literal uses of *stand* and *lie*. In the literal uses in (2-a), the subject referent is described to be in a standing position, i.e., with her feet touching the surface of the couch and her torso more or less vertically aligned, and in a lying position, i.e., with the torso touching the surface of the couch. The non-literal uses of *stand* and *lie* contrast with the non-literal use of *sit*, in that the former describe orientation of the subject referent along an axis, while the latter does not. That is, in (2-b), the water bottle is described to be either vertically or horizontally aligned with respect to the couch, depending on whether *stand* or *lie* is used; in the *sit* sentence in (1-b), there is no orientation description. This difference in non-literal uses across the posture verbs suggests that they cannot be uniformly analysed. An additional difference across the non-literal uses can be seen in (3); the literal uses of each verb are included for comparison.

(3) *Structural differences across the uses of English posture verbs*

- |    |  |             |
|----|--|-------------|
| a. | Marisol { <b>sat</b>   <b>stood</b>   <b>lay</b> } (on the floor). | LITERAL     |
| b. | The water bottle <b>sat</b> *(on the floor).                       | NON-LITERAL |
| c. | The water bottle { <b>stood</b>   <b>lay</b> } #(on the floor).    | NON-LITERAL |

For the literal uses of all three posture verbs in (3), omitting the postverbal location is possible without affecting well-formedness of the sentence. In the *sit* sentence in (3-b),

omitting the postverbal location results in an ill-formed sentence. In contrast, in (3-c), omitting the same postverbal component results in an infelicitous sentence; for example, it is possible to omit the postverbal component when the orientation is highlighted in the context. The variety in location omission across the uses of the posture verbs demonstrates that not only both uses of the three verbs cannot be analysed uniformly. A research goal of this dissertation concerns determining the nature of the literal/non-literal divide for the posture verb class; characterising the divide comprises delimiting each use, and proposing a definition of literal and non-literal posture. I will show that the divide between literal and non-literal uses of a posture verb can be defined by features of the subject referent, namely whether or not the referent is able to transition into and then maintain the respective posture position.

Because of differences amongst the posture verbs, such as presence vs. lack of orientation and the structural variations presented above, the majority of the thesis concentrates on fine-grained examination of *sit*. It is a strength of the methodology to concentrate on the details of the two uses of one verb, more fully mapping out their syntax and semantics; rather than widening the main scope to include two more verbs which pattern distinctly, thereby possibly overlooking finer details.

There are numerous interesting properties of literal and non-literal *sit* that are addressed in this dissertation, both from a synchronic and a diachronic perspective. These properties include the structural differences above, as well as an inference contributed by the non-literal use. An example of this inference is in (4).

- (4) Marisol **sat** in Barcelona for two months. NON-LITERAL

The subject referent of (4), Marisol, is described to be located in Barcelona for an extended temporal interval. However, she is not interpreted to be in a sitting position for the entirety of the two month interval, but rather as not leaving Barcelona for the reference interval's duration.<sup>1</sup> Thus, this is a non-literal use of *sit*. In addition, the use carries an interpretation that during the reference interval, Marisol was idle, or unproductive. This idleness is targeted in (5), with a same-speaker cancellation. The prediction is that if this inference is lexically encoded by *sit*, it cannot be felicitously cancelled.

- (5) Marisol **sat** in Barcelona for two months. #She was productive, making professional connections and advancing on several projects. NON-LITERAL

The attempted cancellation in (5) is infelicitous, suggesting that an 'idle' inference is consistently associated with non-literal *sit*. A research goal in this thesis is to characterise the inference, and determine its source with respect to literal *sit*. That is, this inference is not present in literal *sit* unless additional lexical material encodes idleness. I will propose that the 'idle' inference is a crucial part of the diachronic trajectory, in that it becomes

<sup>1</sup>Even though a scenario is possible that a person is in a sitting position for two months, it is not the most likely interpretation.

consistently associated with non-literal *sit*, and that this inference can be understood with respect to alternative states of non-idleness.

A central argument in the investigation of *sit* is that, synchronically, the literal and non-literal uses each constitute their own lexical entry. More specifically, I argue that while literal *sit* is a lexical verb, non-literal *sit* is a copular verb. Motivations for the classification of non-literal *sit* as a copular verb include the structural data in (3-b) in contrast to (3-a), in addition to the interchangeability of the postverbal component for non-literal *sit*. Based on the results of corpus studies undertaken for this thesis, I demonstrate that *sit* combines not just with postverbal locations, but can also appear with only a postverbal adjective, like in (6).

- (6) The water bottle sat \*(empty). NON-LITERAL

The postverbal adjective in (6) is, parallel to the postverbal location in (3-b), obligatory for well-formedness. The interchangeability of the obligatory postverbal component suggests that a specific argument type is not encoded in *sit*'s lexical entry. That is, in this thesis I challenge the common characterisation in the formal literature of *sit* as a locative verb, wherein the verb's lexical entry includes a locative argument (Maienborn, 1991; Levin & Hovav, 1995; Kaufmann, 1995; Rothmayr, 2009). I propose instead that the literal and non-literal uses represent two different, homonymous, entries. Literal *sit* is a lexical verb, and the postverbal location is adjunctive, while non-literal *sit* is a copular verb with a PredP structure (s.a. Rothstein 2004; Mikkelsen 2005; Gumiel-Molina et al. 2015; van Gelderen 2015, 2018), and that its obligatory postverbal component is most often locative or adjectival. On the definition that I assume here, copular verbs are not lexically empty, and non-literal *sit* itself contributes meaning. A research question of this thesis concerns the semantics of non-literal *sit* as it is used now, independently and in comparison to literal *sit*.

On top of the synchronic account of the literal and non-literal uses, the thesis investigates *sit* from a diachronic perspective. A second central argument of this thesis is that non-literal *sit* developed from literal *sit*. In line with the proposal that non-literal *sit* is analysed as a copular verb, I argue that non-literal *sit* semantically contrasts with the copula *be*. This can be clearly seen in the compatible adjectives that can combine with *sit*, in comparison to those which combine with *be*; examples are in (7).

- (7) *Semantic contrast of non-literal sit and the copula*
- |  |                |
|--|----------------|
| a. The water bottle sat {empty #blue}. | TEMPORARY ONLY |
| b. The water bottle is {empty blue}.   | NO RESTRICTION |

In the non-literal *sit* sentence in (7-a), only a temporary property such as 'empty' can be attributed to the subject. A longer-lasting property, such as the colour of the bottle, is infelicitous. This is in contrast to the copula *be* in (7-b), which can felicitously combine with both types of adjectives. Such a semantic contrast is similar to the one seen in split copula systems, such as in Spanish, with *ser* and *estar* (Fernández Leborans, 1999; Arche,

2006; Gumiel-Molina et al., 2015; Arche et al., 2017; Pérez-Jiménez et al., 2018); note that although there are similarities, I argue in this thesis that non-literal *sit* is further behind than *estar* on its diachronic trajectory. A research goal of this thesis is to characterise the diachronic trajectory of *sit* from its literal to non-literal use. Inherent to this characterisation is not only a static description of the sequential stages in the trajectory, but also a dynamic account of the pragmatic strategies underlying the change. Finally, the posture verb uses irrelevant to this thesis are those describing movement into or out of a posture position, or idiomatic, and therefore non-transparent, uses of the posture verbs. Examples of each are in (8).

- (8) *Irrelevant uses of posture verbs*
- |    |   |           |
|----|---|-----------|
| a. | Marisol <b>sat</b> (down) onto the couch.   | DYNAMIC   |
| b. | Marisol <b>stood</b> up from the couch.     | DYNAMIC   |
| c. | Marisol <b>lay</b> in wait for her enemies. | IDIOMATIC |
| d. | Marisol <b>stood</b> up for Niki.           | IDIOMATIC |

The sentences in (8-a)–(8-b) describe the subject referent of the posture verbs as engaged in a dynamic activity. Namely, in (8-a), Marisol changed from a walking activity, or moved from a standing position, next to the couch, into a sitting position on the couch; and in (8-b) Marisol moves from a lying or a sitting position on the couch, into a standing position next to the couch. The relevant uses of the posture verbs are stative, i.e., those describing an unchanging state, and thereby location, of the subject referent.

The sentences in (8-c)–(8-d) are irrelevant because they are idiomatic. That is, their interpretation depends on a certain combination of lexical items, and this combination cannot be compositionally interpreted. For the idiomatic use of *lie* in (8-c), the combination of *lie* with *in wait* signals an idiomatic interpretation that Marisol is waiting for specific people, but not that she is in a lying position while waiting. Similarly, in (8-d), the combination of *stand* with *up for* and a DP signals an idiomatic interpretation that Marisol defended Niki, not that Marisol stood up when Niki entered the room. The relevant uses of the posture verbs are compositional ones like in (1)–(7).

### 1.3 Thesis outline

This thesis is divided into two parts. Chapters 2–5 form the synchronic proposal, and Chapters 6–7 present the diachronic account. In the following, I outline the chapters.

**Chapter 2** characterises what it means to be a posture verb. In this chapter, I discuss the nature of posture verbs' indeterminate meaning, demonstrating that the posture verbs are ambiguous between their literal and non-literal uses. While *stand* and *lie* have non-literal uses, these non-literal uses are different from that of *sit*; this was shown above in (2)–(3). I argue that these differences are evidence of variation in diachronic development, where the former are less developed than the latter. Following the characterisation of the indeterminate meaning, I define the literal posture for all three verbs, and review current

accounts of non-literal posture uses. In that review, I point out empirical and theoretical gaps in the literature, and analyse eventive properties, including the identification of inferences like the ‘idle’ one in (4)–(5), of the literal and non-literal uses.

**Chapter 3** corroborates claims of Chapter 3 with two synchronic corpus studies. The first corpus study examines non-literal *sit* only and is a posthoc analysis of a previously reported corpus study, with the research questions reframed in a way that enables hypothesis-testing; the second corpus study is a follow-up, examining and comparing non-literal uses of all three posture verbs. Both corpus studies investigate the frequency of subject type, e.g., permanent inanimate entity in contrast to temporary inanimate entity, of postverbal component, and whether there is any interaction between the two components. The second corpus study furthermore compares the results amongst the three verbs. In both studies, postverbal adjectives are observed to replace postverbal locatives on occasion, such as in the example in (6), and that it is very rare to find a non-literal use without a postverbal component; in addition, all subject types are possible, but there does not seem to be any interaction between subject type and postverbal component. Based on the empirical results of Chapter 3 and the theoretical conclusions of 2, I argue that *sit* merits its own investigation.

**Chapter 4** is the first chapter of the thesis examining *sit* only. In this chapter, I delimit the different types of subject referents which combine with both uses of *sit*; this delimitation is based on the entities’ features, and the features are derived from both the empirical results of Chapter 3 and the theoretical conclusions of 2. In addition to the subject types, Chapter 4 examines the contribution of literal and non-literal *sit*, diagnosing the inferences identified in Chapter 2. One inference, describing lack of overall movement from the location, is proposed to be an entailment of both literal and non-literal *sit*; I characterise it as a core component of the posture verbs, and argue that it is evidence for the diachronic connection between the two uses. The second inference, describing the subject referent as not actively being used, is found with non-literal *sit* only; see the examples in (4)–(5). In Chapter 7, I propose that this inference plays an important role in the diachronic development of literal to non-literal *sit*.

**Chapter 5** contains the synchronic proposal of literal and non-literal *sit*, building on the insights of Chapters 2–4. In this chapter, I account for the differences of the literal and non-literal uses of *sit*, on top of accounting for the similarities in the postverbal components. Namely, I assume that literal *sit* is a dynamic static verb, which can have locative or adjectival adjuncts, and propose that non-literal *sit* is a copular verb, which requires a postverbal component that is usually a location or an adjective. Even though the adjuncts combine with literal *sit* differently than the predicates do with non-literal *sit*, I show that postverbal components of both the literal and non-literal *sit* have similarities: both location types are stative, and both adjective types encode temporary properties. These similarities, especially in the compatible adjectives, underline the diachronic development of the literal use to the non-literal use.

**Chapter 6** reviews previous literature on diachronic theory and diachronic accounts of

relevant phenomena, and presents a diachronic corpus study. The review of the diachronic literature provides the foundation upon which the diachronic proposal is built in Chapter 7. The diachronic accounts discussed in this chapter comprise a commonly-cited proposal for the cline of ‘sit’ (Kuteva, 1999), a recent proposal for ‘sit’ in Arabic dialects (Camilleri & Sadler, 2019, 2020), and a proposal of other copular verbs in English (van Gelderen, 2018). In discussing these accounts, I point out where the synchronic patterns of *sit*, examined in Chapters 2–5, are in line with these authors’ claims, and where the patterns contradict the claims. The discussion points out a theoretical, as well as empirical gap, concerning the diachrony of English posture verbs. For this reason, I undertook a diachronic corpus study of English *sit*. The central findings of the study are that non-literal *sit* has indeed increased in frequency over the last two hundred years, and that postverbal adjectives are a significant factor in the development of the literal use to the non-literal use.

**Chapter 7** consists of my proposal for the diachronic path of literal *sit* to non-literal *sit*. In this chapter, I apply the theory reviewed in Chapter 6, and develop an account of the diachronic corpus study results reported in Chapter 6. This diachronic account also takes into consideration the synchronic insights of Chapters 2–5. In particular, I argue that literal *sit* developed into a copular verb, realised as non-literal *sit*, and that this copular verb semantically contrasts with the copula *be* (s. the examples in (7) above). I argue that the ‘idle’ inference introduced above in (4)–(5) plays an important role in the onset context of *sit*’s trajectory; following this, I argue that the information structure of postverbal adjectives is crucial to the intermediate stage where the structure of literal *sit*, a lexical verb, is reanalysed to have the structure of non-literal *sit*, a copular verb. Then, I connect the synchronic picture of *sit*, examined in Chapters 2–5, with its diachronic trajectory. The chapter ends with a discussion about how the trajectory of *stand* and *lie* might develop into in the future.

**Chapter 8** concludes the thesis by summarising the contributions and describing outstanding issues. Furthermore, areas for further research, building upon the insights of this thesis, are pointed out.





## Chapter 2

# Posture verbs and the literal/non-literal divide

This chapter addresses questions which are foundational to the rest of the thesis: I examine previous literature about indeterminate meaning and about posture verbs, and I identify what is missing for an account of English posture verbs. Before looking at the specific questions, let us delimit which verbs are under examination in this chapter.

The relevant class are the posture or positional verbs, which are associated with a particular posture being maintained by the subject referent (Levin, 1993; Newman, 2002). The core or cardinal posture verbs are ‘sit’, ‘stand’, and ‘lie’, which are called such because they comprise the set most likely to have a lexeme in the world’s languages. I say “most likely”, as it has been found that sometimes there are lexemes for only two of the three core verbs, such as in the Austronesian language Rossel which has only the lexemes *kwo* ‘stand’ and *tóó* ‘sit’. To describe a person as lying down in Rossel, additional lexical material is needed: *pîpî a tóó*, ‘sitting prone’ (Levinson, 2006, §5.3.3). Examples of all three core posture verbs used to describe posture are in (1); the sentences are in Arrente, a language of Australia’s Northern Territory, and are discussed in Goddard & Harkins (2002). In each, the posture verb is boldfaced.

(1) *Core posture verbs*

- a. Tyerrtye nhenhe ulye-le    **ane**-me.  
 person this shade-LOC sit-PROG.NONPAST  
 ‘This person **is sitting** in the shade.’
- b. Ampe akweke ulpaye-le    **inte**-ke.  
 child small creek.bed-LOC lie-PASTCOMPLET  
 ‘The baby **lay** in the creek-bed.’
- c. Kweye are-ye, arnkwerte-arnkwerte **tne**-tyele-aye!    Tyerte-pe-arteke  
 girl see-PER crooked-REDUP stand-NEG.IMP-EMPH straight-more-like  
**tne.rne**-irre-aye!  
 stand.with-INCH-EMPH  
 ‘Girls, don’t **stand** in a crooked line! Get in a straight line!’

[ ARRENTE; Goddard & Harkins 2002, p. 216 ]

In (1-a), the referent of the subject is a person who is described to be in a sitting position and they are in that position in a shady area. In (1-b), the referent of the subject is also

a person and they are described to be in a lying position and they are in that position in the sandy part of a creek. In (1-c), the sentence is an imperative, commanding the girls to be in a standing position with a particular alignment. In Arrente, the three verbs *ane* ‘sit’, *inte* ‘lie’, and *tne* ‘stand’ in (1) are classified by Goddard & Harkins (2002) as a natural class, supporting the core delineation.

The sentences in (1) all contain the LITERAL USE of the verbs,<sup>1</sup> as the subject referent is actively maintaining the particular position. This is illustrated in (2) with an English sentence containing *sit*.

(2) Phil is sitting on the chair. LITERAL

The sentence in (2) describes Phil to be in a sitting position and that he is in this position on a chair. In addition to the literal use, these verbs can be used in another way, with inanimate subject referents that are not necessarily in the relevant position.<sup>2</sup> In the literature it has been claimed that when a posture like *sit* combines with a location of that subject referent, and that combination describes the subject as being at that location, i.e., it does not describe the referent’s posture (Kaufmann, 1995; Levin & Hovav, 1995; Maienborn, 1996; Rothmayr, 2009, a.o.). An example with *sit* is in (3).

(3) Phil’s favourite book is sitting on the chair. NON-LITERAL

The sentence in (3) describes a book to be located on a chair. Even if the book is made from a malleable flexible material, like those for infants, it is inconceivable that the book is in a sitting position. Yet, sentences like (3) are felicitous for native speakers of English. Throughout this chapter, I explore distinctions between these two uses for all three core posture verbs.

With the verbs enumerated and the different uses coarsely delimited, we can look at the research questions underlying this chapter’s examination. These are listed in (4).

- (4) *Research questions*
- a. What is the nature of the literal/non-literal divide, and how is it manifested in English posture verbs?
  - b. How can literal uses of posture verbs be defined?
  - c. How can non-literal uses of posture verbs be defined?
  - d. How are the non-literal uses different from their literal counterparts?

The question in (4-a) is the content of §2.1 and concerns literal and non-literal meaning. In order to answer it, I overview previous literature on lexical items with multiple meanings and accounts of these items. First, in §2.1.1 I define literal uses, such as those in (1)–(2), by their transparency and productivity: the posture verbs describe any eligible

<sup>1</sup>The terms “use” and “sense” are utilised interchangeably to indicate “meaning”.

<sup>2</sup>This non-literal use is particularly obvious with inanimate subject referents. However, as I argue later in this chapter, as well as in §4.1, animate beings are possible subject referents of the non-literal use.

subject as maintaining a particular posture. In that same subsection, I identify differences among the posture verbs and argue that the literal/non-literal divide is stricter for *sit* than for *stand/lie*. This is because *stand/lie* still often encode orientation of the referent: if the verb in (3) is exchanged with *stand* or *lie*, the book is understood to be vertically or horizontally oriented, respectively. Based on data such as these, the examination in this thesis largely concentrates on *sit*; *stand* and *lie* are investigated in the present chapter and the subsequent one only.

In the second part of this thesis, I analyse *sit* from a diachronic perspective, proposing *sit*'s trajectory from literal to non-literal. Likewise, I propose in this thesis that non-literal *sit* is further developed than *stand* and *lie*; *sit* no longer has any orientation encoded, like was seen in the book sentence in (3). The difference amongst the posture verbs is discussed in §2.3.2 and later confirmed in naturally-occurring corpus data in Chapter 3. The diachronic view of posture verbs is addressed in Chapters 6–7.

Then in §2.1.2, I give an overview of the previous literature on lexical items with multiple meanings, including various ways to account for these items. For posture verbs, it is possible to classify them as homonymous or polysemous predicates, depending on whether one analyses the different uses as representing two separate lexicon entries, as in the former, or one entry, as in the latter. I argue for a homonymous view of the posture verbs, even though *stand* and *lie* differ from *sit* in their non-literal uses. Non-literal *sit*, being diachronically more advanced than its counterparts, represents a reanalysed structure and meaning, and therefore has a different lexicon entry than literal *sit*. The lexicon entries of non-literal *stand* and *lie* remain open questions.

The question in (4-b) is the content of §2.2 and concerns literal uses of posture verbs. While it is clear from examples like in (1)–(2) that the sentences describe the posture of a referent, it remains unclear who or what is eligible to be that referent, and what it means exactly to be in a sitting, standing, or lying position. In order to answer this question, I first consider what previous authors have proposed for the meaning components, focussing on the seminal work by Newman (2002) in §2.2.1. Then, I build on Newman's work and propose my own definition for each posture verb in §2.2.2–2.2.3. One departure from his proposal is that I explicitly account for non-humans, i.e., animals, which can be described as assuming and maintaining posture positions. In a similar vein, I argue that a pre-condition of literal posture uses is that the subject referent be sentient and capable of assuming/maintaining a posture position; this is what we see in (1)–(2). Referents not meeting this pre-condition, like the book in (3), are considered to be subjects of the non-literal uses.

The question in (4-c) is examined in §2.3, and this question concerns non-literal uses of posture verbs, such as in (3). More specifically, I explore the scant previous literature that exists on this use, demonstrating the empirical and theoretical gaps in the current literature. Both in the cognitive and formal tradition, these verbs are associated with spatial relations. In §2.3.1, I present classic theory on location-encoding strategies from Levinson & Wilkins (2006b) and Ameka & Levinson (2007), based on fieldwork collected over many years for a number of languages. While this theory is important generally

for classifying different languages, and identifying differences in posture verb distribution and use, it overlooks the productivity of, and nuances among, non-literal uses of the core posture verbs in English. In this way, the results of this dissertation contribute to strengthening the generalisation presented in §2.3.1. In §2.3.2, I present another classical account, Maienborn (1990, 1991), this time from the formal literature and specifically about German. This account addresses the location-encoding component found in many, but not all posture verb sentences. In particular, Maienborn proposes that a postverbal location is generally omissible when the posture of the subject referent can be emphasised, especially contrastively. In this thesis, in particular in Chapter 4, based on corpus data in Chapter 3, I argue that there is actually a structural difference across the literal/non-literal divide: postverbal material like a location with the literal use is adjunctive, while for the non-literal uses it is a predicative component. As mentioned above, this structural difference is thus far seen with *sit* only, as *stand* and *lie* have not undergone the same extent of semantic change as *sit* has.

Finally, the question in (4-d) is addressed in §2.3.3, where characteristics of the literal uses are examined with respect to characteristics of the non-literal uses of the core posture verbs. This comparison includes new empirical generalisations of the two uses concerning their eventive properties and a core meaning component. The distribution of the properties analysed in §2.3.3 support the claim that the non-literal uses of the posture verbs should be analysed together. For example, the literal uses only combine with a sentient subject with the appropriate anatomy, and I argue in §2.3.3 that these subjects are agents; in contrast the non-literal use does not have such restrictions on sentience or anatomy, and I argue that the thematic role of the subject is a theme. Additional eventive properties discussed in this subsection are aspect and meaning components.

## 2.1 Lexical items with multiple meanings

This section is concerned with expressions that have multiple meanings, accounts proposed in the previous literature, and how those accounts apply to posture verbs. Expressions with multiple meaning include the posture verbs described above in (1)–(3), which can have a literal or a non-literal use; *bald* in (5), which can express different degrees of baldness; and *chair* in (6), which can have different conceptual types of the referent.

- (5) Phil is **bald**.
- a. ‘Phil has no hair on his head.’
  - b. ‘Phil is beginning to lose his hair.’
- (6) The **chair** is in the living room.
- a. ‘A piece of furniture is in the living room.’
  - b. ‘A person with a role in an academic organisation is in the living room.’

In (5), two scenarios are possible for *bald*, depending on the context. The first, in (5-a), indicates that a person described with *bald* has no hair on their head, while the second, in (5-b), shows that in another interpretation the subject referent can still have hair on their head. Similarly, in (6), the two possible interpretations for *chair* in the main sentence are listed. In (6-a), the interpretation is that *chair* denotes a piece of furniture, while in (6-b), it denotes a person with a particular role.

Because there are multiple meanings, expressions like those in (5)–(6) are called INDETERMINATE. I use this term in the present section for any expressions whose sense is not clear on its own, such as in the examples. An expression not meeting this definition is, for example, the homophonous triple *to/too/two*. Although the triple is phonetically identical, it is ineligible as an item bearing multiple meanings, because the items are heterographic.<sup>3</sup> In this case, the differences in spelling clear up any doubts about which item has which denotation.

In the formal literature, sometimes authors note or discuss the multiple meanings of indeterminate items, but it is uncommon that an account explicitly delimits non-literal uses.<sup>4</sup> In not addressing these points, accounts of linguistic behaviour can overlook systematic patterns. In addition, as pointed out by McNally & Spalek (2022), identifying and examining the non-literal uses opens a pathway into otherwise overlooked insight on the literal counterparts of such expressions. I outline my assumptions of the difference between the two meanings in §2.1.1, a foundation upon which I build throughout this thesis.

Alongside this, much of the formal semantic tradition, in particular that based on Montague Grammar, assumes, usually implicitly, that an expression with indeterminate meaning comprises multiple lexical entries.<sup>5</sup> Another view is that many indeterminate expressions comprise one sole lexicon entry, and that the different senses are connected by a core meaning component. Inherent to this discrepancy is the task of classifying indeterminate meaning types, as some types are more likely than others to be represented separately in the lexicon. I address this debate in §2.1.2.

### 2.1.1 Indeterminate meaning and the literal/non-literal divide

This subsection serves to establish that posture verbs, the object of this dissertation, have indeterminate meaning. Additionally, the groundwork is laid for the discussion of theoretical approaches to indeterminate meaning in the subsequent subsection.

Although the distinction between literal meaning and non-literal meaning certainly exists in the linguistic and philosophical literature, these terms are used inconsistently across many authors' works (s., e.g., Ariel 2002; Gasparri & Marconi 2019 for an overview). Here I briefly review what different denotations for these terms have been used in the

<sup>3</sup>The homophonous triple is meant as a counterexample to indeterminate meaning. I do not assume that heterographic relationships always amount to different meanings. There are orthographic differences of words, depending on whether the author uses the British and American English spelling: e.g., *grey* and *gray*, which are orthographically different, but refer to the same colour.

<sup>4</sup>I define non-literal meaning more precisely in §2.1.1.

<sup>5</sup>Although see Sutton & Filip 2021 on count/mass items, for a recent exception.

past, and which approach I follow. Then, I state more clearly what I mean with “literal” and “non-literal” uses of posture verbs, so that theories of indeterminate meaning can be evaluated for posture verbs in §2.1.2.<sup>6</sup>

For some authors, most famously Grice (1975), LITERAL MEANING is compositional, truth-conditional meaning only; context can affect the meaning only through indexicals or tense. Distinguishing context-independent meaning from context-sensitive meaning reflects Grice’s arguments for implicatures, in that non-truth-conditional meaning like irony and metaphor is explained with inferential processes derived from the truth-conditional meaning. Other authors, such as Carston (2002) and Recanati (2004) argue for another extreme, that no meaning is fixed, but rather that pragmatic processes determine what is relevant. Somewhere in the middle is considered to be Searle (1978, 1980), who is credited to be the first to point out that literal meaning depends on context and background knowledge in addition to truth conditions. In particular, he characterises the variable truth-conditional meaning of *cut*, which changes per the entity being cut. Searle (1980) begins with five sentences containing English *cut*, shown in (7), which are arguably all instances of literal meaning.

- (7) *Literal uses of cut*
- a. Bill **cut** the grass.
  - b. The barber **cut** Tom’s hair.
  - c. Sally **cut** the cake.
  - d. I just **cut** my skin.
  - e. The tailor **cut** the cloth.

[ from Searle 1980, p. 221 ]

Although all five sentences of (7) are not ironic or metaphoric, the verb differs in denotation. For instance, *cut* in (7-a) means that many grass blades were shortened by lopping off the tops and the instrument was most likely a lawnmower; *cut* in (7-e), on the other hand, means that the referent of *the cloth* was separated into two, most likely with a pair of scissors. Although there is a similarity in the senses, they are not identical. The examples in (8) all contain the verb *cut* like in (7), but the interpretations vary from those in (7).<sup>7</sup>

<sup>6</sup>Throughout this thesis, I apply the terms “literal” and “non-literal” to different uses of an expression. This nomenclature is meant to reflect both the shared meaning across the uses, motivated in §2.3.3, and that the non-literal use is derived from the literal one, motivated in Chapter 7 for *sit* in particular.

<sup>7</sup>In the original text, a further example is presented in this set, shown in (i). I omit it here because the use is crystallised to only this VP, unlike the two uses seen in (8) but like the idiomatic uses below in (9). It is possible, however, that in earlier generations, this use is in fact productive.

- (i) Sam cut two classes last week.

[ from Searle 1980, p. 221 ]

(8) *Non-literal uses of cut*

- a. The President cut the salaries of the employees.
- b. The Raiders cut the roster to 45.

[ from Searle 1980, p. 221 ]

In the sentence in (8), *cut* contributes the meaning of ‘reduce’. In (8-a), the interpretation is that the salaries are reduced, while the reduction in (8-b) affects the number of players on a team, not a financial number. The sentences in (8) all concern abstract objects, in contrast to the concrete entities seen in (7). Therefore, the interpretations in (8) are not categorisable as literal ones. Searle (1980, p. 222) suggests that these are figurative extensions of the literal use(s), and that a hearer must understand the literal meaning in order to understand the non-literal meaning. Although only implicit in the source text, the non-literal uses of *cut* in (8) are not limited to salaries and rosters, but can be used with other abstract objects. That is, these uses are compositional, productive, and not crystallised.

The properties of the non-literal use differentiate it from idioms, which are not transparently compositional and are usually limited to specific inputs (s. Gehrke & McNally 2019 on an analysis of the grammatical flexibility of idioms). Examples of idioms containing *cut* are in (9).

(9) *Idiomatic uses of cut*

- a. Bob can’t cut the mustard.
- b. Cut the cackle!
- c. Cut it out!

[ from Searle 1980, p. 221 ]

In (9-a), *cut* does not contribute any meaning about disconnecting, separating, or reducing anything, even though the referent of *mustard* could be a concrete object. Instead, the sentence has the interpretation ‘Bob doesn’t meet the expected standard’; this particular idiom cannot occur with the positive form of *cut*, like a Negative Polarity Item (NPI). In both (9-b) and (9-c), the use of *cut* encodes stopping an activity; for (9-b) the intended activity is talking and for (9-c) it is the referent of *it*. Changing the argument inputs for either is not possible without changing the entire meaning of the phrase.

Searle (1980, p. 224) characterises the differences in meaning for a verb like *cut* as being akin to mathematical functions which are variable: the output of the function depends on its input, where for linguistics the input is the argument structure and the output the interpretation. For *cut*, concrete objects of the verb are associated with literal meaning outputs, although there are variations depending on the exact input, like we saw in (7). Abstract objects are associated with non-literal meaning outputs, and again there are variations depending on the exact input, like we saw in (8). Finally, some combinations, such as in (9), give an idiomatic output which is no longer compositional.

In this thesis, I follow Marantz (1984), Pustejovsky (1995), Hanks & Jezek (2008), Asher

(2011), and Spalek (2014, 2015), who build on Searle’s idea concerning the input of the function. That is, one of the main research goals in this thesis is to determine the linguistic input of each use, in addition to elucidating the exact meaning of each use. For the remainder of this subsection, the discussion turns to the verbs under investigation and classifies the relevant meaning with respect to literal/non-literal nomenclature.

As was seen in the *cut* examples in (7), literal meaning as a category is murky on its own. Likewise, non-literal meaning can also appear in various shades; we did not see this for *cut* above, but will see it in a moment for the posture verbs. In addition to this variety on each side of the literal/non-literal divide, some verbs might have only one literal use or non-literal use, or there might exist variations of either use. That is to say, even though I call the difference between literal and non-literal uses of the posture verb a “divide”, I do not always assume that literal uses are related in the same way to non-literal uses as we saw with *cut* above. Even within the posture verb class, there are differences.

The introductory chapter of this thesis put forth the main research goal of investigating the nature of the literal/non-literal divide. Using posture verbs as the object of inquiry, this thesis examines them from a synchronic and diachronic perspective, on the assumption that the non-literal uses are derived from the literal ones. In the following, I show data suggesting that the literal uses of all three posture verbs form a natural class, while the non-literal uses of these verbs have not developed at a parallel pace. That is, the non-literal use of *sit* has already advanced further than the non-literal uses of *stand* and *lie*.<sup>8</sup> Interestingly, despite this diachronic variation, the non-literal uses exhibit similar semantic patterns (s. constructed examples in §2.3.3 and corpus data in §3.2), an observation which most likely is the reason that the previous literature lump the non-literal uses together (s. an overview of the relevant accounts in §2.3.1–2.3.2).

As I show in §2.2, literal uses of posture verbs are only possible when the subject is sentient and capable of volitionally assuming/maintaining the respective posture; the limits of that capability are drawn by anatomy of the subject referent, excluding, e.g., those animals without feet who cannot be in a standing position. This is shown in (10), where a dog<sup>9</sup> felicitously interpreted as standing is compared with a foot-less aquatic animal and its infelicitous combination with the verb *stand*.

(10) *Some subject referents can literally stand and others cannot*

- a. My dog was standing in the pool.
- b. #My dolphin was standing in the pool.

In (10-a), the referent of *my dog* is described as being in a standing position; as is shown in §2.2.3 the canonical standing position for quadrupedal mammals is when all four legs are straight, the feet are touching the ground and they are supporting the body.

<sup>8</sup>The details of *sit*’s diachronic trajectory are proposed in Chapter 7, after the synchronic data are examined and accounted for.

<sup>9</sup>If one wished to further delimit the literal uses, it would perhaps be possible to distinguish between humans and eligible animals as subject referents. However, as I show in §2.2.3, the selectional restrictions are parallel for each, demonstrating that this level of fine-grainedness is unnecessary for posture verbs.



It is inferred from this sentence that a dog, which has the sentient feature, volitionally assumed a standing position, regardless of whether or not it was commanded to do so by its owner or trainer. Unlike the dog in (10-a), the dolphin in (10-b) cannot be described as being in a standing position. Even though this animal is sentient and has volition to change its body position, it does not have the proper anatomy to assume such a position. Based on examples such as this, I propose that the literal use of posture verbs is possible when the subject refers to a sentient, volitional being with the appropriate anatomy for assuming the relevant posture. This proposal is fine-tuned in §2.2.

For those referents not meeting this selectional restriction and for combinations which are not idiomatic, the use is non-literal. As is discussed in §2.3, sometimes the subject of a posture verb is non-sentient and non-volitional, yet the orientation of that entity can still be salient for two of the posture verbs.<sup>10</sup> This is shown in (11), with an inanimate bottle, whose orientation is either vertical or horizontal depending on the verb choice. The orientation inference is not cancellable in a continuation.

- (11) *Orientation entailments in non-literal uses*
- a. A bottle was standing on the shelf, #but it was actually horizontal.
  - b. A bottle was lying on the shelf, #but it was actually vertical.

In the sentence in (11-a), the referent of *a bottle* is in a vertical position on the shelf, while the referent in (11-b) is horizontally oriented. The continuation in both sentences, contradicting the respective orientation is infelicitous; this suggests that the orientation is conventionally encoded by the verb, and I assume that this is entailed meaning. Additionally, in neither instances is it possible that the bottle moves into the position itself; rather, an external participant put the bottle in that position, and they or another external participant will take that bottle out of the position. According to the definition I assume here, this lack of sentience and volition disqualifies these utterances from being labelled as “literal”, even if an orientation entailment persists with *stand* and *lie*.

The orientation entailments of *stand* and *lie* contrast with the lack of such an entailment with *sit*. In (12), this is shown with a sentence with the same subject as those in (11).

- (12) A bottle was sitting on the shelf.

In the sentence in (12), the referent of *a bottle* is not necessarily oriented along a specific axis. Nor, due to its non-malleability, is it possible to interpret the bottle as being in a sitting position like a human would be. If a continuation targeting the sitting position was included in (12), it would be odd, but not in the same way as for the cancellations found in (11). Namely, instead of cancelling a meaning component encoded by the verb, the continuation would be attempting to re-enforce the absence of a posture interpretation.

<sup>10</sup>Throughout this thesis I differentiate between the “orientation” of the subject referent when discussing non-literal uses of *stand* and *lie*, and the “posture” when discussing literal uses of all three verbs. This demarcation is meant to highlight the lack of sentience and volition for those non-literal combinations.

Due to the extent of diachronic change *sit* has undergone, the non-literal use no longer encodes posture meaning.

The meaning component which is retained from the original, literal, use is one describing the subject referent to not have moved from the overall location during the reference interval. This meaning component is found not only with both uses of *sit*, but also *stand* and *lie*. In §2.3.3, I develop this idea further for all three verbs.

With *sit* only, there are also examples of a sentient and volitional subject referent combining with that verb in the non-literal use. Crucially, these examples lack a posture entailment while still encoding lack of movement, hence their classification as non-literal. In addition, these utterances can carry an inference, which can be paraphrased for now as being ‘idle’ or ‘unused’.<sup>11</sup> For humans and nonhuman animals with the appropriate sitting anatomy (s. §2.2.2), such as the person in (13-a), there is often a temporal PP describing an interval that would be too long for a human to maintain a sitting position, and/or there is a phrase describing what the person should have been doing otherwise. For those animals ineligible to be in a sitting position (s. §2.2.3), such as dolphins or the goldfish in (13-b), it would be pragmatically nonsensical to describe them as assuming such a position. For both cases, posture of that subject referent is no longer entailed, and the utterance is accompanied by an inference of ‘idleness’.

(13) *Non-literal uses of sit with sentient subject referents*

- a. Phil sat in his house for days, not yet ready to return to work.
- b. The goldfish is sitting in a corner of the tank.

Neither the human in (13-a) nor the goldfish in (13-b) is entailed to be in a sitting position. In (13-a), this is clear due to the reference interval. That is, it would not be possible for the subject to maintain a sitting posture for so long, unless that person were dead or sick. In (13-b), the subject referent is clearly not in a sitting position because it is a goldfish and does not have the required anatomy for a sitting position. In both sentences of (13), the referents of the subject do not move from their house or tank, and there is an ‘idle’ inference. I will argue in §4.2 that the inference is an implicature arising from the non-movement information encoded by *sit*, in combination with contextual information concerning what else the subject referent could be doing. This is unlike the *stand* sentence in (10-b), where context cannot override the lexical contribution of *stand*. For the *sit* sentence in (13-a), the interpretation is that Phil was idle, not leaving the house to work. For (13-b), the interpretation is that, instead of swimming all around, the goldfish is staying in a small area of the tank. That is, both sentences are interpreted with respect to contextual information about an alternative activity.

To summarise, this subsection has given an overview of literal meaning, what literal meaning has been described not to be, and how I define literal and non-literal meaning for the posture verbs. An idea discussed here is that the argument structure, i.e., the input of a

<sup>11</sup>I claim in §2.3.3 that the non-literal use of *sit* is most often associated with this ‘idle’ inference. In addition, I examine its distribution within that verb’s non-literal use’s combinatory possibilities, and apply traditional diagnostics to it in Chapter 4.

verb with indeterminate meaning, can determine the interpretational output of that verb. We see this in the division of literal and non-literal: The posture verbs in their literal uses require a sentient and volitional subject referent who has the appropriate anatomy to assume the posture, as was introduced in (10) and will be developed in §2.2. In contrast, we saw in (11)–(12) that the non-literal uses do not have such a requirement. In addition, I demonstrated in this subsection that the non-literal uses of the posture verbs are not identical to one another: *stand* and *lie* encode orientation, while *sit* does not. We also saw in (13) that the correct context allows sentient and volitional subject referents with *sit* only, although that context is constrained to those interpretations where no posture is encoded. It is shown later in this chapter that there is an additional structural difference between *stand/lie* and *sit*, suggesting that these non-literal uses cannot be analysed in the same way. Such differences among the verbs are indicative of the necessity for fine-grained studies of individual verbs. The next subsection continues the fine-grained investigation.

### 2.1.2 Lexical items with indeterminate meaning

The previous subsection demonstrated that the core posture verbs, *sit*, *stand*, and *lie* can have different meanings depending on the subject type and context. One use, the literal one, predicates posture of a sentient subject who additionally has the appropriate anatomy, while the other use investigated here, the non-literal one, does not predicate posture, and the subject does not carry the same restrictions. The present subsection presents a taxonomy of multiple meaning types and how to differentiate between them. Then, the meaning type of the posture verb class is identified with those diagnostics. This identification of meaning type is important to this thesis, because different analyses in this respect have different consequences for analysing the phenomenon overall. For one, it is important to flag whether one assumes a single-entry analysis or a multiple-entry one, as well as how the different meanings are resolved.

We begin with HOMONYMY, which is a lexical phenomenon concerning expressions with multiple meanings (s., e.g., Tuggy 1993; Sennet 2016 for an overview of the phenomenon). Two typical defining components of homonymy are that the meanings are distinct from one another and that the item is pronounced the same regardless of which meaning it conveys. The first component differentiates homonymy from, e.g., polysemy, described in more detail below. The second component differentiates the phenomenon from items like *desert*, where the stress pattern changes across the nominal and verbal forms. A common example of English homonymy in the literature is *bank*, as depicted in (14) with its two meanings.

- (14) *Homonymy*
- a. bank<sub>1</sub> : ‘financial institution’
  - b. bank<sub>2</sub> : ‘land at river edge’

The senses of *bank* in (14) are pronounced the same, however they lack a connection with one another: financial institutions (14-a) rarely have anything in common with a

particular strip of land near a river (14-b). Homonymy is also known as AMBIGUITY, and I use the terms interchangeably. There are different kinds of ambiguity, one of which we saw in (14) with *bank*: lexical ambiguity. Another is structural ambiguity, where the ambiguity arises because of variable syntactic structures associated with the same string of words. An example of both types is in (15), with the ambiguous item boldfaced.

(15) *Different sources of ambiguity*

- |    |   |            |
|----|---|------------|
| a. | It is difficult to see the <b>bank</b> from the bridge. | LEXICAL    |
| b. | The <b>chicken</b> is ready to eat.                     | STRUCTURAL |

[ Sennet 2016 ]

The sentence in (15-a) is ambiguous because of the multiple meanings of *bank*. We know from (14) above that there are two distinct meanings associated with *bank*, so that (15-a) could either mean that, from the bridge, it is difficult to see ‘the financial institution’, perhaps due to intervening buildings, or ‘the land at the river’s edge’, perhaps due to heavy vegetation. There are also two meanings associated with (15-b), but the ambiguity here is rather due to two possible thematic roles for the subject, which is connected to the subject’s syntactic position (Baker, 1988; Williams, 1983). That is, the referent of *chicken* can be an agent or a theme; it can consequently be the entity which is eating or the one being eaten.

One could understand ambiguity as the indeterminate meaning counterpart of VAGUENESS, as the former’s meanings are distinct while the latter’s are indistinct. A common example of a vague lexical item is *bald*, as seen in (16).<sup>12</sup>

- (16) The **bald** guy will pick you up at the station. VAGUE

Not knowing the referent of *the bald guy*, the hearer of (16) would not know what exactly to expect with respect to hair quantity of the man meeting them at the station. That is, it would be completely natural to characterise all of the following as ‘bald’: (i) a man who has lost some hair on top of his head but still has hair on the sides, (ii) a man who shaved his head even though naturally he has all his head hair, (iii) a man who lost all of his head hair due to ageing, and (iv) a man who has lost no hair at all due to alopecia. Because vagueness concerns meanings that are indeterminate with respect to their denotation, learning more about baldness will not change a vague expression’s indeterminate nature, unlike learning more about ambiguous expressions like *bank* would make *bank* less indeterminate (Gillon, 1990).

Vagueness is different from ambiguity in that the various possible senses of *bald* are similar to each other: they all concern having a quantity of hair and this quantity is less than some norm or expectation. The possible meanings of *bank* or *chicken* in (15) have discrete meanings: a financial institution is not easily confused with a sandy place by the river, and a living animal eating something is different than one that is prepared to be eaten. Even though one could argue that in, e.g., a farmyard situation, a chicken could

<sup>12</sup>For a recent overview of the literature on vagueness, see Sutton (2013, §1.3).

be eating when it is attacked by a fox, but this is not the most likely interpretation of (15-b). To confirm the (non-)discreteness of ambiguous expressions, one diagnostic is the identity test, illustrated in (17).

- (17) *Identity test for sense discreteness*
- |    |  |           |
|----|--|-----------|
| a. | Mary is wearing a <b>light</b> coat; so is Jane. | AMBIGUOUS |
| b. | Mary has <b>bald</b> boyfriend; so has Jane.     | VAGUE     |

[ Adapted from Cruse 2004, p. 106 ]

In the ambiguous sentence in (17-a), the boldfaced item, *light* can mean either ‘pale in colour’ or ‘not heavily insulated’. For (17-a) to be felicitous, either Mary and Jane are both wearing a pale coat or they are both wearing a thin coat; it is not possible to interpret this sentence as ‘Mary wears a pale coat and Jane wears a thin coat’. In the vague sentence in (17-b), the boldfaced item, *bald*, can express varying degrees of baldness, as discussed about for (17). In contrast to the ambiguity in (17-a), a vague word like *bald* can be felicitous if the propositions for Mary and Jane differ; i.e., it is possible to interpret (17-b) as ‘Mary has boyfriend with alopecia and Jane has a boyfriend who is just beginning to bald’. In identifying the felicitous interpretations for expressions under ellipsis, it is possible to see whether an expression tends towards being ambiguous or being vague.

Another common diagnostic for distinguishing ambiguity from vagueness is conjunction reduction (Zwicky & Sadock, 1975). This test coordinates two meanings of an indeterminate word. When the meanings are distinct, it gives rise to zeugma, or infelicity; only non-vague words are expected to result in infelicity. A classic example is in (18).

- (18) #John and his driver’s licence **expired** yesterday. (Cruse, 1986)

The two meanings of *expire* in (18) are ‘die’, which requires a living subject, and ‘change from being valid to invalid’, which typically combines with licences or permissions (Bhatt, 1999; Iatridou et al., 2003; Folli & Harley, 2008). When these two senses are combined, it sounds semantically odd, or depending on one’s sense of humour, like a joke. In (19) the ambiguous expression from above, *bank* is used in the zeugma test.<sup>13</sup>

- (19) #The **bank** is sandy and has high interest rates. AMBIGUOUS

When multiple senses of an ambiguous expression like *bank* are coordinated, the result is odd, as is seen in (19). That is, it is odd to describe either a financial institution as sandy or a land by the river as having high interest rates. While it is fine to ascribe ‘being sandy’ to a piece of land by the river, it is odd to ascribe the same property to a financial

<sup>13</sup>Adapting the structurally ambiguous sentence in (15-b) requires the full structure of the original sentence plus two coordinated clauses targeting the two meanings, in contrast to the simplicity of testing *expire* in (18) or *bank* in (19). This is shown in (i). Because this additional complexity is irrelevant to the present discussion, I omit it from the main text.

- (i) The chicken is ready to eat. #It is impatiently running around and will be served with broccoli.

institution. However, there might be somebody who does not find the latter odd, in particular if they interpret the referent of *bank* as being a building hosting the financial institution. The coordination in (19) would be felicitous for such a person. Authors such as Geeraerts (1993) and Tuggy (1993) regard this contextual inconsistency as a weakness of the test's diagnostic power.

In (20), the vague expression, *bald*, is used in a zeugma test. As can be seen, the results are different for ambiguous and vague expressions.

(20) Gus and Bill are **bald** guys. VAGUE

When multiple senses of a vague expression are coordinated, the sentence is not as odd. Namely, the referents of *Gus* and *Bill* can be bald to varying degrees, e.g., one is completely hairless, one with some hairs. Continuing the critique about building contexts, it is probably possible to argue that if one referent has alopecia and the other has merely lost the majority of their head hair, then (20) is infelicitous.<sup>14</sup> Even with the contextual issues, the zeugma test is a useful tool for identifying tendencies concerning the discreteness or non-discreteness of an item's senses: Ambiguous expressions have discrete senses, thereby being more likely to produce infelicity under coordination, while vague expressions have different senses which are rather non-discrete, meaning that these expressions are more likely to be felicitous under coordination.

Before diagnosing the indeterminate meaning type of the target case study in this dissertation, English posture verbs, an indeterminate category somewhere in-between the ambiguity and vagueness is introduced: POLYSEMY. A polysemous expression is one with multiple senses, although there are different natures of polysemy and much debate on how to analyse them (s. Falkum & Vicente 2015; Vicente 2018 for recent overviews). For one, polysemous senses are considered to be more related to each other than in the case of homonymy and more distinct than in the case of vagueness. An example of a polysemous expression is in (21).

(21) *Polysemy*

a.	I brought my <b>lunch</b> in my backpack.	‘food’
b.	<b>Lunch</b> was really long today.	‘event’

[ Based on examples in Pustejovsky 1995 and Vicente 2018 ]

The word *lunch* in (21) has two different senses, one concrete and one abstract. In (21-a), *lunch* has the sense ‘food’, which is confirmed by the context; i.e., *lunch* as an entity like food can be located in somebody's backpack. In (21-b), *lunch* has the sense ‘event’, which is also confirmed by the context; i.e., only the event interpretation can be described with respect to its length. The two polysemes of *lunch* in (21) cannot be interchanged.

Unlike the vast difference between the ambiguous senses in (15), the two senses of *lunch* in (21) are arguably similar: the food that will be eaten at the midday meal and the

<sup>14</sup>This would additionally depend on the (un-)certainty commitments of the speaker and hearer (Lasersohn, 1999; Beltrama, 2018).

meal itself are both called “lunch”. In comparison to vagueness, it is more clear what the boundaries of *lunch*’s two interpretations are: while the food consumed in the midday meal can vary, the event of the meal always takes place in the middle of one’s day. In this way, the two senses of a polysemous expression are related to one another and are generally distinguishable from one another.

The identity test is challenging to execute for indeterminacy across abstract and concrete senses, but applying zeugma tests to polysemy is possible. A critique of zeugma and polysemy, however, is that it can deliver a false negative result (Viebahn, 2018), such as when a non-zeugmatic combination actually comprises polysemes. In (22), different polysemous predicates are displayed with coordinated senses, demonstrating the variety.

(22) *Different degrees of zeugma across polysemous lexical items*

- a. **Brazil** is a large Portuguese-speaking republic that is very high in inequality rankings but always first in the FIFA ranking.
- b. The nearest **school**, which starts at 9:00, fired some teachers and forbade hats in the classroom.
- c. ?The **newspaper** fired its editor and fell off the table.
- d. ?The **bottle** Susan was drinking fell out of her hands.

[ Assembled from various examples in Ortega Andrés & Vicente 2019 ]

In each sentence of (22), the predicate selects a few of its possible senses and these senses are coordinated. In (22-a), the predicate is the country of Brazil and the two senses are ‘country’ and ‘football team’. In (22-b), the predicate is a school and the senses are ‘timetable’, ‘staff’, and ‘rules’. In (22-c), the predicate is a newspaper and the senses are ‘institution’ and ‘physical object’. In (22-d), the predicate is a bottle and the two senses are ‘liquid’ and ‘physical object’. All of these sentences contain polysemous predicates, but they do not deliver the same results with the zeugma test. This is reflective of the heterogeneous nature of the phenomenon, and suggests one should proceed with caution when discussing the results of the coordination test.

With these three meaning types of ambiguity, vagueness, and polysemy identified, let us consider which one is applicable to the indeterminate meaning of posture verbs. An expectation might be that polysemy is the correct type, as the posture verbs’ literal and non-literal uses all share meaning components, especially for *stand* and *lie*. Even though the meanings are related, they are distinct, therefore excluding vagueness from the expected meaning type. The distinctness of the literal and non-literal meanings allow the possibility that the meaning type is ambiguity. The two meanings of the posture verbs are coordinated in (23), with a human and a book subject referent; the posture verb is boldfaced in each.

(23) *The posture verbs’ distinct meanings*

- a. #Phil and the book **sat** on the floor.
- b. #Phil and the book **stood** on the floor.

- c. #Phil and the book lay on the floor.

As can be seen in (23), the literal and non-literal uses of all three posture verbs cannot be coordinated.<sup>15</sup> This indicates that the senses are indeed distinct, and are not an instance of vagueness. Although there are some types of polysemy which deliver similar results, like we saw in (22-b)–(22-d), the various properties of the posture verbs' different meanings suggest that the meaning type is ambiguity instead of polysemy. In §2.1.1, I discussed how the literal use of each core posture verb requires a sentient and volitional subject, while the non-literal use has no such requirement; later in §2.3.3, I argue that the subject is an agent for the literal use and a theme for the non-literal use. This difference has structural consequences and thus goes beyond the differences of the polysemous predicates in (22-b)–(22-d). In addition to a variation in the subject's thematic role, there is a further argument structure difference across the literal/non-literal divide. This is shown in (24).

(24) *Argument structure variation across the literal/non-literal divide*

- |    |   |             |
|----|---|-------------|
| a. | Urska is {standing sitting lying} (on the bench).         | LITERAL     |
| b. | <i>A Perfect Spy</i> is {standing lying} #(on the bench). | NON-LITERAL |
| c. | <i>A Perfect Spy</i> is sitting *(on the bench).          | NON-LITERAL |

A postverbal location of the literal use is optional for each of the three posture verbs in (24-a); considering that the literal uses of these verbs predicate posture of their subject, it is not surprising that, e.g., *Urska is standing* is well-formed. For the non-literal uses of *stand* and *lie* in (24-b), the postverbal location is required for felicity, but not grammaticality. As will be shown in §2.3.2, a postverbal location can be omitted in contexts where the orientation of the subject referent is highlighted. For example, the utterance *The book is standing, not lying* is felicitous, because the vertical orientation is being contrasted with the horizontal one. This infelicity of a location-less sentence for *stand* and *lie* in (24-b) is different than the ungrammaticality for *sit* in (24-c), even though both sets are non-literal uses. Namely, because there is no orientation to be highlighted, it is not possible to omit a postverbal expression such as a location.

As mentioned in Chapter 1, I analyse the non-literal use of *sit* as a copular verb, in contrast to the literal use as a lexical verb. Besides the ungrammaticality of omitting the postverbal location, I argue, based on corpus data reported in Chapter 3, that postverbal adjectives can appear instead of postverbal locations. In Chapter 5 I propose that the location is not an argument of *sit*, but rather that the postverbal location or adjective is the main predicate of a sentence with non-literal *sit*. The difference between a copular verb and a lexical verb is vast; combined with the zeugma results in (24) I analyse the two uses of *sit* to comprise two separate lexicon entries.<sup>16</sup> In Chapter 7, I propose the

<sup>15</sup>There is some amount of weak wordplay possible for *stand* and *lie*, but then Phil would to be interpreted as dead, not sentient. This means that even in zeugma the sentience requirement persists.

<sup>16</sup>Although there are authors who might still argue for a single-entry view of the posture verbs, especially with core meaning component across the literal/non-literal divide (§2.3.3). There is psycholinguistic evidence for “co-activation” of related senses, such as from Frisson (2009); Klepousniotou et al. (2008);



details of *sit*'s diachronic change from the lexical verb denoting posture to the copular verb no longer denoting posture.

The difference between non-literal *stand/lie* and non-literal *sit* in (24) indicate that it is not possible to analyse all three posture verbs in the same way. That is, if a postverbal expression is not obligatory for the former verbs, it would not make sense to also analyse *stand* and *lie* as copular verbs—at least not yet. I demonstrate in §2.3.3 that non-literal *stand* and *lie* share properties with non-literal *sit*, including the crucial one of combining with a non-agentive subject. The similarity of the non-literal verbs is additionally seen in the naturally-occurring data presented in §3.2. All this is to say that the synchronic picture of non-literal *stand* and *lie* is similar to non-literal *sit*, except where orientation encoding and postverbal omissibility is concerned. For this reason, I propose that *stand* and *lie* are not as far developed as *sit* in terms of their diachronic trajectories (s. Chapter 6 for theory on diachronic change and Chapter 7 for my proposal of *sit*'s change). It is possible that, eventually, *stand* and *lie* will also be reanalysed as a copular verb.

In sum, this subsection has presented different types of indeterminate meaning, ranging from homonymous expressions with discrete and often unrelated senses to vague expressions with related, non-distinct senses. An in-between category is polysemy, which is heterogeneous in itself, but overall represents lexical items with related senses that are more distinct from one another than those of a vague expression. I argued that the indeterminate meaning of the posture verbs comprises distinct senses, and that they are ambiguous/homonymous. This classification matches my proposal in Chapter 5, which analyses literal *sit* as a lexical verb, with an agentive subject and not requiring a postverbal category, and non-literal *sit* as a copular verb, with a theme subject and requiring a postverbal category; in other words each use has its own lexical entry. In addition, I discussed in this subsection how the variety amongst the non-literal uses of *stand/lie* and *sit* means that there cannot currently be a uniform account of the verbs. I propose that the former verbs are still undergoing a diachronic change, and have not yet been fully reanalysed as copular verbs like *sit* (s. Chapter 6 on diachronic theory and Chapter 7 on my diachronic analysis of *sit*). The next section proposes a definition of literal posture for the core set.

## 2.2 Delimiting literal posture

In the previous section, a number of claims about English posture verbs were made. Namely, these verbs can have two different meanings, which I call here “literal use” and “non-literal use”; the former predicates posture of its subject and the latter does

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MacGregor et al. (2015); s.a. the overviews in Falkum & Vicente (2015); Hogeweg & Vicente (2020); Carston (2021). Co-activation means that the various possible meanings are not in competition with each other. On such accounts, it would not matter that different meanings have different syntactic realisations. However, in addition to the assumption that lexicon entries comprise structural, as well as semantic, information, the coordination of senses in (23) delivers a clear zeugma result, suggesting that co-activation is not the most likely possibility for posture verbs.

not. In addition, I identified the indeterminate meaning of posture verbs as ambiguity/homonymy, based on the discreteness of the meanings and structural differences. The content of the current section examines the nature of the literal use of all three verbs, including details on eligible subjects. Following this section, the previous literature on non-literal uses is discussed and theoretical gaps are identified in §2.3.

The roadmap for this section is the following. First in §2.2.1, I outline theory from the cognitive and typological literature, creating the background upon which I build my definition of which types of subject referents are possible with the literal uses. Then, in §2.2.2–§2.2.3, I outline the anatomical restrictions needed for maintaining the core postures, thereby delimiting what kind of referents can and cannot assume these positions.

### 2.2.1 The core posture verbs

This subsection presents conceptual background on the three core posture verbs. While these verbs have been largely ignored in the formal literature (although see Gamerschlag et al. 2011, citations in §2.3.2 for exceptions), detailed studies have been carried out by researchers in cognitive linguistics and typology. One such work, Newman (2002), an introductory chapter to an edited volume about the core posture verbs, provides the basis for the content of this subsection.

Before proceeding, a clarification is in order. Namely, the literal use of posture verbs in the literature cited here is generally associated with humans only, and usually implicitly so. Although there is a brief mention of non-humans in Newman (2002, §5), that discussion is mixed in with what I call non-literal uses (s. §2.1.1). In §2.2.2, I delimit literal posture uses for humans and then in §2.2.3, I demonstrate that these uses are possible for some non-human sentient beings as well.<sup>17</sup>

According to Newman (2002), the core posture verbs have a meaning centred on four domains. These domains describe what informs the image schema, a concept originally from Langacker (1987) concerning pre-conceptual representations of a human in the particular posture; the term *ACTIVE ZONE* is originally from Langacker (1984). The four domains are listed in Table 2.1.<sup>18</sup>

<sup>17</sup>In addition, the authors cited in this chapter often use the terms “metaphorical”, “figurative”, and “grammaticalized extensions” interchangeably, not explicitly distinguishing between compositional/transparent and idiomatic non-literal uses (cp. §2.1.1). The phenomenon under investigation in this dissertation concerns non-idiomatic, non-literal uses and I therefore only utilise “non-literal” to refer to those uses; otherwise I signal the nature of any other use when relevant.

<sup>18</sup>Even though the discussion in Newman (2002, §2) centres on English, he also extends the observations to other languages. My own proposal in §2.2.2–2.2.3 builds on these cross-linguistic observations, but is intended to be applied to literal uses of English posture verbs. Relatedly, in this section I use italics when naming each verb, as if talking about the English verbs, except when explicitly discussing another language.

TABLE 2.1: Central meanings of English core posture verbs (Newman, 2002, Table 1)

Domain	Verb	Description
I. SPATIO-TEMPORAL	<i>sit</i>	relatively compact position
	<i>stand</i>	vertical elongated position
	<i>lie</i>	horizontal elongated position
II. FORCE-DYNAMICS	<i>sit</i>	medium degree of control and balance (upper torso) easily maintained
	<i>stand</i>	highest degree of control and balance (upper and lower torso) most difficult to maintain
	<i>lie</i>	lowest degree of control and balance no physical effort to maintain
III. ACTIVE ZONE	<i>sit</i>	buttocks (and upper torso)
	<i>stand</i>	legs (and upper torso)
	<i>lie</i>	whole body
IV. SOCIAL/CULTURAL	<i>sit</i>	comfortable position either for working or relaxing
	<i>stand</i>	potentially most physically powerful posi- tion
	<i>lie</i>	associated with tiredness, sickness, sleep, death

The first domain of Table 2.1, SPATIO-TEMPORAL, concerns “the overall spatial configuration which presents itself and is maintained through time” (Newman, 2002, p. 1). This domain describes the configuration of the figure in relation to the ground,<sup>19</sup> with the implication that the figure is not moving throughout the duration of the state (s.a. Clark 1973; Serra Borneto 1996 on perception of spatial domains). For *stand* and *lie*, the figure is extended either along the vertical or horizontal axis, respectively; for *sit* in contrast, the figure is “relatively compact”, and not extended along any axis.<sup>20</sup>

The details of the SPATIO-TEMPORAL domain can often be seen in the non-literal uses of posture verbs as well. In particular, *stand* and *lie* describe the figure as extended along the respective axis, and these two verbs have clear extensions in the non-literal, locative domain. The sentences in (25) illustrate with non-sentient subject referents; the examples are from the South American language Trumai, discussed in Guirardello-Damian (2002), one of the papers in the 2002 volume edited by Newman.<sup>21</sup>

<sup>19</sup>I use “figure” and “ground” in the sense of Talmy (1972) and subsequent works.

<sup>20</sup>Although Newman (2002, 2002) delineates this domain, he also points out later that a standing dog is more horizontal than it is vertical; in this way, the legs are more important than the overall vertical orientation, at least for the literal uses. Even though this note is in a separate section called “Posture-based locational expressions” in Newman’s text, I argue in §2.2.3 that dogs and other non-humans can also be described as literally standing.

<sup>21</sup>The literal translations of these sentences have been added by me.

(25) *Extension of the SPATIO-TEMPORAL domain in non-literal uses*

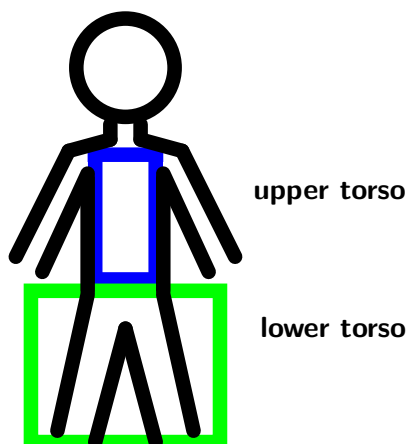
- a. Tehnene-n tahu yi la.  
 floor-LOC knife yi be.**standing**  
 (lit. ‘The knife is **standing** in the floor.’)  
 ‘The knife is inserted into the floor.’
- b. Mesa natu-n ka\_in iwir yi chumuchu.  
 table back/top-LOC FOC/TENSE stick yi lie  
 (lit. ‘The stick **lies** on top of the table.’)  
 ‘The stick is on the table.’

[TRUMAI; From Guirardello-Damian 2002, pp. 159, 162 ]

In (25-a), the figure is a knife perpendicular to the ground, which is the floor in this case. In other words, it is vertically extended. In contrast, in (25-b), the figure is a stick, a small piece of wood parallel to the ground, which is a table. In this way it is horizontally extended. Non-literal uses of the core posture verbs are discussed further in §2.3.

The second domain seen in Table 2.1, FORCE DYNAMICS DOMAIN, concerns what is needed for a human to maintain the respective posture, i.e., the sensorimotor control needed. This control does not refer to movement of a body part, but rather to what a person needs in order to keep (a) body part(s) upright, therefore resisting gravity. Before looking closer at the details of sensorimotor control for each core posture, we should know what zone is what, in Newman’s terms. In Figure 2.1 I illustrate what he views as the key body zones for sensorimotor control.

FIGURE 2.1: Key body zones according to Newman (2002)



For Newman, the *upper torso* refers to the body part not including the head, neck, and arms above the waist, and the *lower torso* refers to the area below the waist, including the legs. As displayed in Figure 2.1, the blue square encases the upper torso and the green square, the lower torso. It is not specified in Newman (2002), but it is typically irrelevant how the arms or head are positioned, or if they are in movement, as one can be described as, e.g. ‘sitting/standing while nodding’ (s.a. §2.3.3).

In Table 2.2, I have summarised what Newman (2002) proposes are the sensorimotor-control requirements of a human for each posture verb. Except for the order of the

verbs, this is identical to what is found in the parenthetical information of Table 2.1, in the FORCE DYNAMICS DOMAIN section; the order has been changed to reflect the hierarchy of sensorimotor control.

TABLE 2.2: II. FORCE DYNAMICS: Sensorimotor control requirements for the core posture verbs, after Newman (2002, p. 2)

Verb	Body part(s)
<i>stand</i>	upper and lower torso
<i>sit</i>	upper torso
<i>lie</i>	—

As can be seen by the Table 2.2, describing a subject with the verb *stand* requires that the subject has control of the upper and lower torsos. The verb *sit* on the other hand requires only that the subject has control of the upper torso. As Newman (2002, p. 2) points out, the legs, which are part of the lower torso, “can be quite relaxed, or even paralyzed”. And finally, the verb *lie* has no requirements with respect to sensorimotor control. According to Newman, these tendencies of sensorimotor control inversely correspond with the amount of time a human is able to maintain each type of posture.

While I agree with these descriptions with respect to orientation and the fact that the subject needs to be in control of their body parts, I doubt that it is always possible to correctly evaluate what is true sensorimotor control, i.e., to what degree a body part is controlled, and where that control is located in a body. In addition, it is unclear why sensorimotor control only correlates with verticality, as suggested by the values in Table 2.2. For example, when a person is in a sitting position, how does one evaluate the amount of control needed to maintain upright a torso resting against the back of a chair. Surely this is less control than when there is no chair back, but this is also not necessarily zero control of the torso. Regardless of which degree of control one assigns the figure, the person is still in a sitting position. This suggests that control of a body part is not sufficient for defining literal posture. In §2.2.2–2.2.3, I argue that while sensorimotor control, and therefore sentiency, is a general prerequisite for maintaining a posture position, the appropriate anatomy is more important.

The next domain of the core posture verbs’ central meaning, listed as the third one in Table 2.1, is ACTIVE ZONES. This term is credited to Langacker (1987, pp. 271–4), and it denotes the “salient subpart of the overall meaning which is most directly involved in the interaction of entities or maintenance of a state” (Newman, 2002, pp. 2–3). In other words, the active zone then constitutes an agent’s principal body part used in an eventuality involving the body. Newman’s examples of other verbs and their active zones are *blink*, whose active zone is the eyelids, and *kick*, whose active zone is the foot. The active zones for the core posture verbs are listed in Table 2.3, extracted from Table 2.1.

TABLE 2.3: III. ACTIVE ZONES for the core posture verbs, after Newman (2002, p. 2)

Verb	Body part(s)
<i>stand</i>	legs (and upper torso)
<i>sit</i>	buttocks (and upper torso)
<i>lie</i>	whole body

The first verb listed in Table 2.3, *stand*, is associated principally with the legs, and secondarily the upper torso. The area between the legs and the upper torso is irrelevant; rather, Newman (2002, p. 3) indicates that the vertical shape of a standing position depends on the two listed active zones. In this way, the ACTIVE ZONES of *stand* are almost the same as the sensorimotor control requirements listed in Table 2.2: only the butt is ostentatiously omitted from the description of the lower torso by Newman (2002).<sup>22</sup> It seems it is assumed that if the legs are vertical and the upper torso is vertical, it follows that the pelvis is appropriately straightened.

The second verb in Table 2.3, *sit*, is associated principally with the buttocks and secondarily with the upper torso. This suggests that the legs and the waist are not relevant for maintaining this posture. Like with *stand*, the ACTIVE ZONES for *sit* are quite similar to the sensorimotor requirements listed in Table 2.2: in this case, only the legs part of the lower torso are omitted. This follows the claim above, that it is irrelevant whether the legs are extended straight out, bent, or swinging back and forth.

The third verb, *lie*, is associated with the entire body in the table, although in the source text, Newman (2002, p. 3) indicates that any one side of the body is the relevant part. It is hinted that the point of contact with a surface is important, although only in the discussion of *lie*, not the other two verbs. This idea of where the body comes into contact with a horizontal surface is incorporated more explicitly in my proposed definition in §2.2.2. The final domain of Table 2.1 above is the SOCIO-CULTURAL DOMAIN. The details of the associations according to Newman (2002) are extracted from Table 2.1 and these extracted details are shown in Table 2.4.

TABLE 2.4: IV. SOCIO-CULTURAL DOMAIN of the core posture verbs

Verb	Association
<i>stand</i>	potentially most physically powerful position
<i>sit</i>	comfortable position either for working or relaxing
<i>lie</i>	associated with tiredness, sickness, sleep, death

While the details of each verb in this domain are connected to the literal use, this domain is ultimately connected to the prototype of humans and what they usually do when assuming these positions, in contrast to the other three domains, which describe the spatial details. Therefore, this domain is claimed to directly inform the metaphorical extensions of the posture verbs. This domain does not inform the non-literal uses of the posture

<sup>22</sup>Although “buttocks” is the more technical term for this body part, in this thesis I primarily use “butt”.

verbs to the same extent as it does for an idiom; on the definition assumed here, non-literal uses are not idiomatic and not metaphorical (s. §2.1). For example, *stand against great odds* is an idiomatic use of *stand* which is connected to this association of power.<sup>23</sup> This dissertation, however, is interested in the non-idiomatic/metaphorical non-literal meanings overall, so idiomatic uses and thereby this domain will not be discussed further. Summing up, the four domains discussed in this subsection are I. SPATIO-TEMPORAL, II. FORCE-DYNAMICS, III. ACTIVE ZONE, and IV. SOCIO-CULTURAL. The domains (ii) and (iii) concern humans and which body parts are needed to maintain the respective posture; these domains are only applicable to the literal use. Domain (i) describes the position of the figure with respect to an axis, and, as was noted above, these observations are applicable to the non-literal uses, as well as to the literal ones. Domain (iv) is only applicable to idiomatic, non-compositional uses.

In the next two subsections, the insights concerning domains (ii) and (iii) are expanded upon for literal uses of posture verbs with human and non-human subject referents. This expansion to non-humans is a departure from Newman's proposal, although it is based on the notion of sensorimotor control from domain (ii). Namely, not only do humans have sensorimotor control over their body parts; other animals do as well, and they can be described as sitting, standing, or lying. This does not mean that all sentient beings are capable of assuming each or all of the core postures, because for some their anatomy does not allow for it. The definition of literal posture that I propose in the next subsections limits the non-humans to those with the appropriate posture for each position.

### 2.2.2 Human anatomy and literal posture

The previous subsection described a proposal from Newman (2002) on the conceptual background of the core posture verbs, including the required sensorimotor control and active zones. In this subsection, I build on those insights as applied to humans and propose a modified definition of literal posture. The subsection begins with my assumptions of preconditions and the relevant body parts for those subject referents combining with literal posture verbs. Following this foundation, I propose my own conditions for each posture verb with a human subject referent.

We know from §2.2.1 that the referent of a posture verb's subject must have sensorimotor control in the literal use, and that they must maintain the respective posture for the duration of the eventuality. Based on this fact, I assume that it is necessary for the subject referent of literal posture to be sentient.<sup>24</sup> In addition, it is necessary that they have the appropriate body parts for assuming the respective posture. For humans, the anatomical requirement is redundant, because the posture verbs canonically combine with human

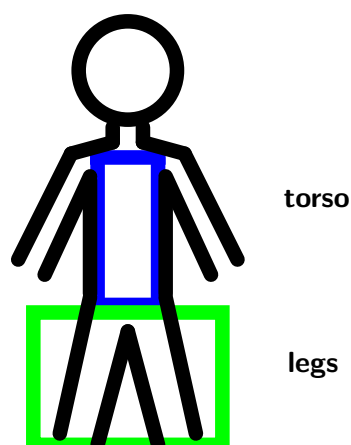
<sup>23</sup>See also Gibbs et al. (1994), an experimental study on other non-literal uses of *stand*.

<sup>24</sup>That is, a sentient figure is a necessary precondition for literal posture in the strict sense. The posture verbs can be used with non-sentient subjects and still encode orientation. However, because these figures are not responsible for maintaining the posture themselves, I regard the uses as non-literal. See §2.1 on my assumptions about the indeterminate meaning of posture verbs, and §2.3 on the non-literal uses.

referents; it is demonstrated in §2.2.3 that the anatomical requirement constrains the type of non-human, sentient figures for each verb.

I propose that the defining characteristics for each core posture verb is primarily dependent on which body part is both in contact with a horizontal surface and therefore supporting the body. Three different points of support correspond to each of the core postures: the butt, the feet, and the torso. Although it is possible that more than these body parts are in contact with the ground,<sup>25</sup> it is these that are mainly responsible for supporting the body against gravity. The relevance of each body part for the different postures is examined below, although my assumptions concerning torsos and the butts deviate from Newman (2002): I assume that the torso begins above the waist, and that the butt is below the waist, usually considered to be a fleshy part, and related to the hip joint.<sup>26</sup> These zones are demarcated in Figure 2.2.

FIGURE 2.2: Key body zones of literal posture: Torso and legs



Above, Figure 2.1 represents the key body zones assumed by Newman (2002), who has a vague delimitation of the torso, divided at the waist into upper and lower torso. Figure 2.2 representing my assumptions contains a blue box encasing both the upper and lower torso parts. Again, head and arms are irrelevant for core posture. Unlike in Newman (2002), I do not regard the legs as part of the lower torso, but rather I see them as important in their own way. For this reason, the blue box in Figure 2.2 is labelled “torso” and the green box “legs”. These body parts are important because the angle of the torso to the legs changes across the different postures, depending on the point of support. When defining each posture, I discuss how the legs are angled with respect to the torso while assuming that the point of support entails this angle.<sup>27</sup> Possible deviations are discussed below.

For the examination of each verb, I use the illustrations in Figure 2.3 as a point of departure. This figure is a set of drawings from Lemmens (2014) depicting the possible

<sup>25</sup>I assume here that the ground has a surface which is more or less horizontal. This surface comprises the area where the relevant body parts come into contact.

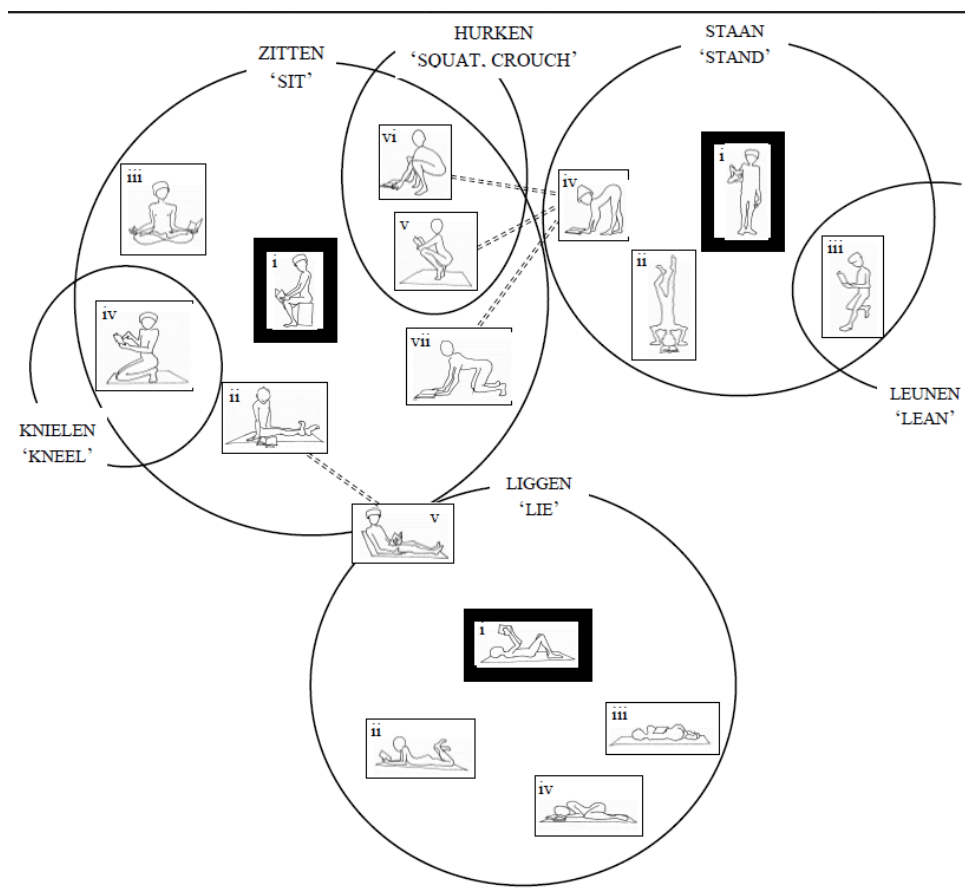
<sup>26</sup>Identifying the butt might seem to be superfluous for humans, but this anatomical groundwork must be laid in order to extend the definition of literal posture use to non-human animals in §2.2.3.

<sup>27</sup>Angles discussed in this section are approximations and included only for the purpose of discussion. Similarly, I use “unbent” and 180-degree angle interchangeably.



positions denoted by core posture verbs in Dutch, as well as three non-core postures. As that discussion describes the Dutch verbs, I use single quotes when naming the posture verbs as described for Dutch, and italics when describing differences with respect to the English verbs.

FIGURE 2.3: Core posture verbs as expressed in Dutch, ©Maarten Lemmens & Jan Vanstechelman



In Figure 2.3, the circles with a core posture verb are identifiable by bold-faced rectangles; the discussion here is limited to these circles and therefore to the denotations of only core posture. These bold-faced rectangles represent what the illustrators consider to be the prototypical posture variant.

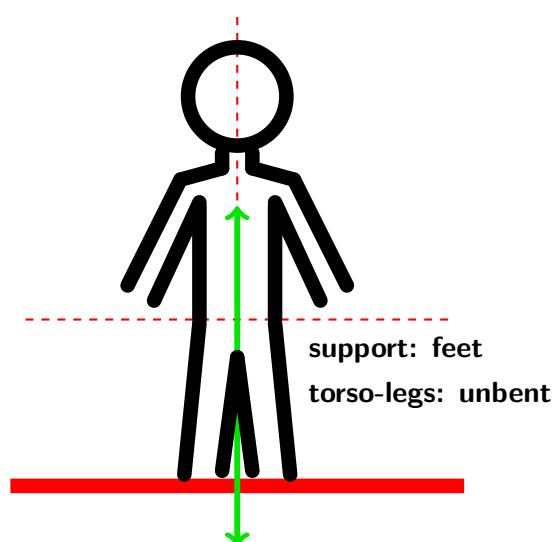
Beginning with the circle in the upper right of Figure 2.3, we look at the core posture verb 'stand'. In the 'stand' circle, images (i), (ii), and (iv) are within the core circle, and image (i) is the prototypical image. In image (i), the figure's torso is upright, perpendicular to the ground, and their feet is the point of contact with the ground.

Of the three images in the core circle, image (i) is the only one which can be described by the English verb *stand*. Images (ii) and (iv) need additional lexical material: for (ii), the figure is *standing on their head* and for (iv), they are *standing bent over*. In terms of the angle of the torso to the legs, in image (ii) it is about 180 degrees, while in image (iv), the angle is less than 180 degrees at the hip joint, looking more like 90 degrees. In terms of the point of support, in image (ii) it is the figure's head and in image (iv) it is

all four appendages.<sup>28</sup> In English, image (iv) is the most difficult to match with the core posture verb *stand*. The points of contact in this image additionally are not all points of support: the arms are bearing less weight than the legs; if they were bearing more weight, the figure would be in a downward-dog position with a 180-degree angle of the arms and the torso. Either way, when there are more points of contact than just the feet, it is no longer possible to describe the figure as being in a standing position; this is most likely because additional points of support entail a torso-leg angle that is less than 180 degrees. Another way to see a standing position is that it is the static parallel to the walking position: the canonical walking position requires the feet, not the hands, to support the human in movement.

If we assume that the denotation of a core posture verb is limited to positions describable without further lexical material, the positions in images (ii) and (iv) are eliminated, leaving only image (i) as eligible. In terms of the defining condition, the point of support is the feet and this point of contact entails a relatively unbent angle of the torso and legs. This is depicted in Figure 2.4.

FIGURE 2.4: The literal use of *stand* for a human figure



As is illustrated in Figure 2.4, the figure represents the standing position of a human. The feet are supporting the body, and the angle of the legs to the torso is 180-degree, or unbent.

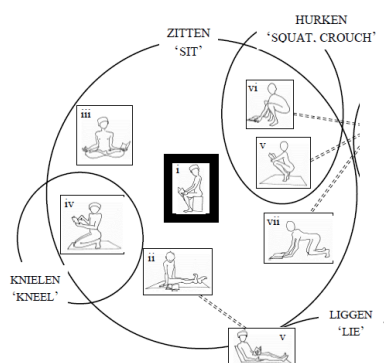
The proposed definition of the literal use of *stand* is in line with Newman's FORCE DYNAMICS domain, where sensorimotor control of the upper torso is required. A consequence of the perpendicularity with respect to the ground is that the angle of the torso and legs at the hip joint is at about 180 degrees. However, that is as far as the definitions match: Newman's ACTIVE ZONE comprises the legs and upper torso, while the relevant body part

<sup>28</sup>Perhaps in Dutch it is the angle of the knee bend that plays a role, in the sense that all three of these stand images have more or less unbent knees; there is no additional clarification in the source text. That being said, I hesitate to include knee angle as a conditional feature for English, because it is possible to be in a sitting position or lying position with a 180-degree angle at the knees.

for support here is the feet. In my account, the point of support is more important than sensorimotor control of certain body parts.

Now we turn to the verb *sit*. The circle containing *sit* has been cropped from the original and is displayed in Figure 2.5.

FIGURE 2.5: Core posture verbs as expressed in Dutch, ©Maarten Lemmens & Jan Vanstechelman; excerpt of ‘sit’

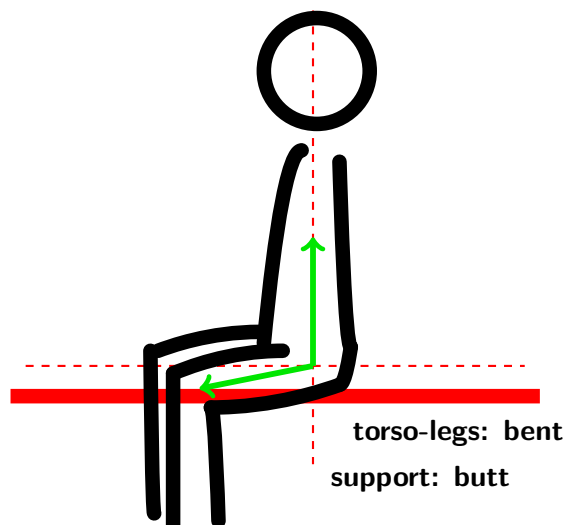


In the *sit* circle in Figure 2.5, images (i)–(iii), (vii) are in the core circle, and image (i) is the prototype. This prototype depicts a person with an upright torso, and with their legs bent at a 90-degree angle at two points, at the hip joint and at the knee joint. Looking only at the key zones, i.e., the torso and legs, the figure in ‘sit’ image (i) is similar to ‘sit’ images (ii)–(iii), in that they all have a similar angle at the hip joint. In ‘sit’ image (ii) the figure’s legs are unbent, and in ‘sit’ image (iii) the figure’s legs are folded upon themselves. Despite these differences in the angles at the knee joints, all three images depict a figure whose rear-end is in contact with some horizontal surface, supporting the body. This is in line with Newman’s proposal that the principal active zone is the butt and that the positioning of the legs is irrelevant, as well as that the upper torso must be upright.

In contrast, the fourth image included in the core circle, ‘sit’ image (vii), depicts a figure supporting themselves with their hands and knees, with the torso horizontal and their rear-end in the air. In English at least, such a figure would not be described with *sit*. Rather, the matching expression involves no posture verb at all: *on all fours* or *on one’s hands and knees*.

I propose that a literal use of *sit* in English describes a figure whose butt is the point of support and is in contact with a horizontal surface. The torso and legs therefore have an angle of around 90 degrees. This was seen in ‘sit’ images (i)–(iii) in Figure 2.3. In Figure 2.6, a sitting position is sketched.<sup>29</sup> The thick red line represents the surface for determining the point of support. The green arrows superimposed on a red dotted line axis represent the angle of the legs and torso.

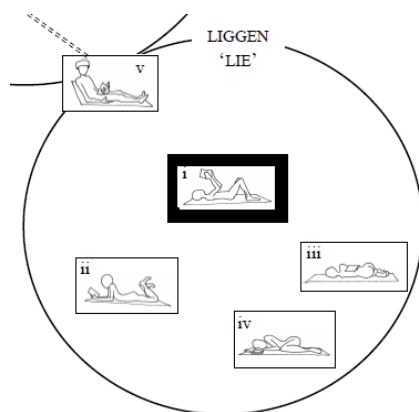
<sup>29</sup>The real-life parallel is lost, as the figure has no arms; the arms were omitted from the picture so that the angle of the hip joint is visible.

FIGURE 2.6: The literal use of *sit* for a human figure

The body in Figure 2.6, the butt of the figure is in contact with a horizontal surface and supports the figure, fulfilling the condition for a literal use of English *sit*. In addition, the legs are bent at the hip joint, as is indicated by the text in the lower right corner. In Figure 2.6 the legs are also bent at the knee joint, but this angle is irrelevant to the definition; the more important feature is point of support. The body in Figure 2.6 reflects ‘sit’ images (i)–(iii) that we saw in Figure 2.3 above.

Finally, we will look at the core circle for the lying position. For Figure 2.7, I have cropped the ‘lie’ circle from Figure 2.3.

FIGURE 2.7: Core posture verbs as expressed in Dutch, ©Maarten Lemmens &amp; Jan Vanstechelman; excerpt of ‘lie’



In the ‘lie’ circle in Figure 2.7, there are four variants of the lying position, as seen in images (i)–(iv). Although it is unclear why image (i) is the prototypical one, all four variants are without question describable in English with the core posture verb—and without additional lexical material. What ‘lie’ images (i)–(iv) all have in common is that one side of most of the torso, regardless on which side of the body, is in contact with a horizontal surface. Although support is a less crucial concept in this posture, the torso is arguably supporting the body; if that weren’t the case, the legs could not be in variable

positions as is seen in the images. In ‘lie’ image (ii), the upper part of the torso is slightly raised, but this raising does not preclude the figure from being in a lying position; in the other three images, the upper part of the torso is completely in contact with the horizontal surface. This condition is more strict than Newman’s delineation of the entire body as the ACTIVE ZONE for ‘lie’, but it accurately accounts for the variations seen in Figure 2.7. In terms of the angle of the torso and the legs at the hip joint, it seems that any angle is possible: in image (i) the angle is about 100 degrees, in image (ii) it is 180 degrees, in image (iii) it looks to be 90 degrees, and in image (iv) it is something close to zero. Thus, the angle of the legs and torso at the hip joint is irrelevant for *lie* in English.

The defining condition for being in a lying position is that the point of contact is the torso. Unlike for ‘sit’ and ‘stand’, I do not include an additional illustration, because ‘lie’ is more straightforward and because the positions in Figure 2.7 are true for English.

In sum, the literal uses of the three core posture verbs in English are differentiated by the subject referent’s point of support. This refers to the body part which is not only in contact with the ground, but also supporting the figure. For *stand*, the point of support is the feet, which reflects the dynamic counterpart of a human, i.e., when walking. This is an important point because in the *stand* circle of Figure 2.3 an image of a person bent over was included; in English this image does not correspond with the literal use of *stand*. Instead, as was sketched in Figure 2.4, the literal use of *stand* comprises a human whose torso-leg angle is unbent. For *sit*, the point of support is the butt, which entails that the torso-leg angle is bent; the leg angle at the knees is variable. For *lie*, the point of support is the torso; no particular torso-leg angle is entailed for *lie*. These angles are not necessary or sufficient conditions, but rather dependent on the point of support.

While my proposed conditions for the literal use’s subject referent build on observations of Newman (2002) (cf. Table 2.1 in §2.2.1), the features in my proposal are streamlined to the necessary ones only: I demarcate one restriction per verb. In particular, I define a point of support for the figure, and argue that this is enough to differentiate between figures in the core posture positions. This point of support has consequences for the angle of the torso to the legs, e.g., for *stand* they are unbent, but this angle is not relevant for all three verbs. When a core posture verb is used in an English sentence, the subject referent’s alignment must match the description of the figure as defined in this subsection. In contrast, the core meanings identified by Newman (2002) comprise four aspects. The point of support feature is similar to Newman’s active zones, but there is only partial overlap with the butt body part for his ‘sit’ and my *sit*; Newman delineates additional body parts which seem to be superfluous rather than sufficient features.

Additionally, as noted in the beginning of the subsection, I only assume that general sensorimotor control be possible, in that the figure is sentient and able to assume/maintain the relevant posture, before changing the posture or moving again. In contrast, Newman (2002) enumerates which body parts are actively controlled for ‘stand’ and ‘lie’, while arguing that ‘lie’ requires no control. On my proposal, if the figure has no control over their body, they are not sentient and therefore in a coma or dead; this would then be a

non-literal use of *lie*, with a corpse-like subject referent.<sup>30</sup> The next subsection expands the proposed definition of each verb to non-humans.

### 2.2.3 Non-human anatomy and literal posture

As was shown in §2.2.2 for humans in and maintaining positions of core posture, the most important body parts for core posture are between the torso and the feet. The discussion in this subsection begins with animals with an anatomy similar to humans: mammalian quadrupeds, which have legs, feet, and a butt. Mammals lacking these parts, such as aquatic ones with flippers and not legs, as well as non-mammals, are addressed at the end of the subsection.

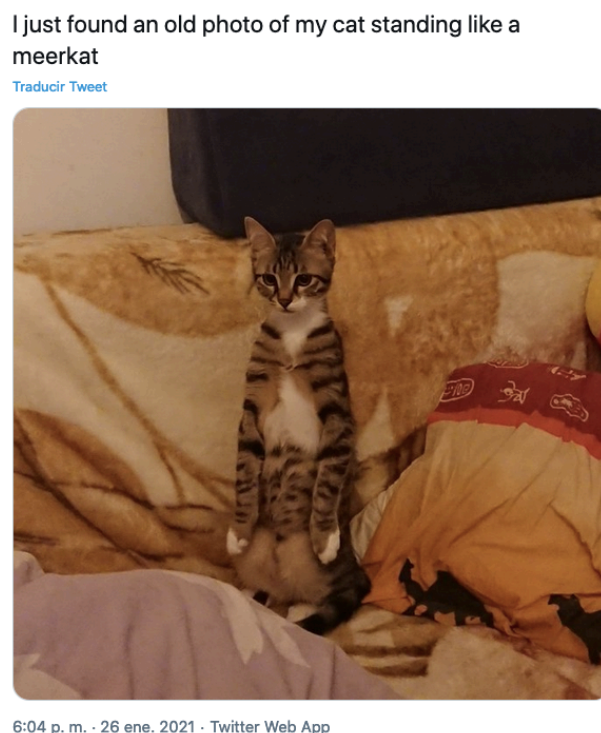
The discussion of literal posture in this subsection departs from the source proposal, in that I explicitly include non-humans, while Newman (2002) and colleagues focus on humans (§2.2.1). Although these examples with non-human animals may be natural-sounding to many native speakers, I include naturally-occurring examples with photographs, as empirical support that these literal uses do exist. These examples are posts from the social media platform Twitter,<sup>31</sup> and while they are all depictions of cats, the observations are applicable to any sentient, mammalian quadruped. In addition, all of the examples and discussion concern English posture verbs only, hence I return to using italics when naming the individual posture verbs. We first will look at *stand*, and how while quadrupeds can stand in the same way as bipeds, it is not the canonical position. Figure 2.8 illustrates a cat with its hind paws as the point of support and the angle of the torso to the legs is about 180 degrees.

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<sup>30</sup>Related to sentience, the subject referents of literal posture uses are responsible for transitioning in and out of the posture. The living human who became the corpse may have been in a particular posture when they died, but the corpse cannot transition out of the posture. I return to these subject referents in §4.1.3.

<sup>31</sup>The symbol [g] is a hyperlink to the appendix, where the URLs for each example are included.

FIGURE 2.8: Tweet of a non-canonical standing position for a cat [g]



In Figure 2.8, there is a picture of a cat in an upright position. Its front legs are straight along the body, resting on the belly, like the arms of a human. The legs are possibly bent, but it is unclear in the picture due to the abundance of fur. The tweeted text contains additional lexical material, *like a meerkat*, referring to a mongoose native to South Africa who is known for its behaviour of standing with the support of only its hind feet, especially when on the lookout for danger. Lacking the phrase referencing the mongoose, however, the sentence *I just found an old photo of my cat standing* would not be an accurate description of the accompanying picture. As such, a cat standing like a meerkat is not representative of a basic standing position for cats—or any quadruped.

In Figure 2.9, two pictures of cats in a representative standing position are displayed. Figure 2.9B is a non-canonical view of this canonical position, but as the text of Figure 2.9A indicates, it is not easy to convince a cat to stand still.

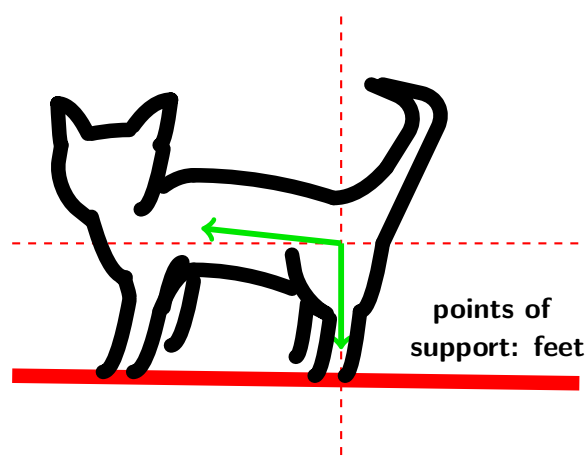
FIGURE 2.9: Tweets of cats in standing positions [g]



In the first Tweet, Figure 2.9A, the referent of *my cat*, is a black feline who is in a canonical cat standing position. This means that the points of contact with the horizontal surface are all four paws, not any other part of the leg. The torso is parallel to the ground, unlike a standing human or meerkat, who would have a vertical torso when in a standing position. In the second Tweet, Figure 2.9B, the referent's entire body is not visible on the printout. However, it is possible to see that the head, the front right paw, and back right paw are visible, in a way that contrasts with the meerkat stance of Figure 2.8. Namely, the points of support are both the front and back paws. Although the other two paws are not visible, one can assume that these paws, if the cat is not disabled, were not in the air. Also, like in Figure 2.9A, no other parts of the leg are in contact with the copier surface. One can deduce from the photo that all four legs are unbent, because if the legs were bent, the stomach of the cat would have appeared (partially) in the blurred way that the head is pictured. These images show that not only is alignment along the vertical axis irrelevant for quadrupeds, but the angle of the legs to torso is different: for the cat not in a canonical standing position in Figure 2.8 the angle is 180 degrees, and for the standing cats in Figure 2.9 the angle is 90 degrees. Using the idea discussed for standing humans, a standing cat's position is the static counterpart of their walking stance. That is, the crucial alignment does not concern a complete orientation with the vertical axis, but rather support of all available feet. The pictures in Figure 2.9, not Figure 2.8, match this crucial alignment.

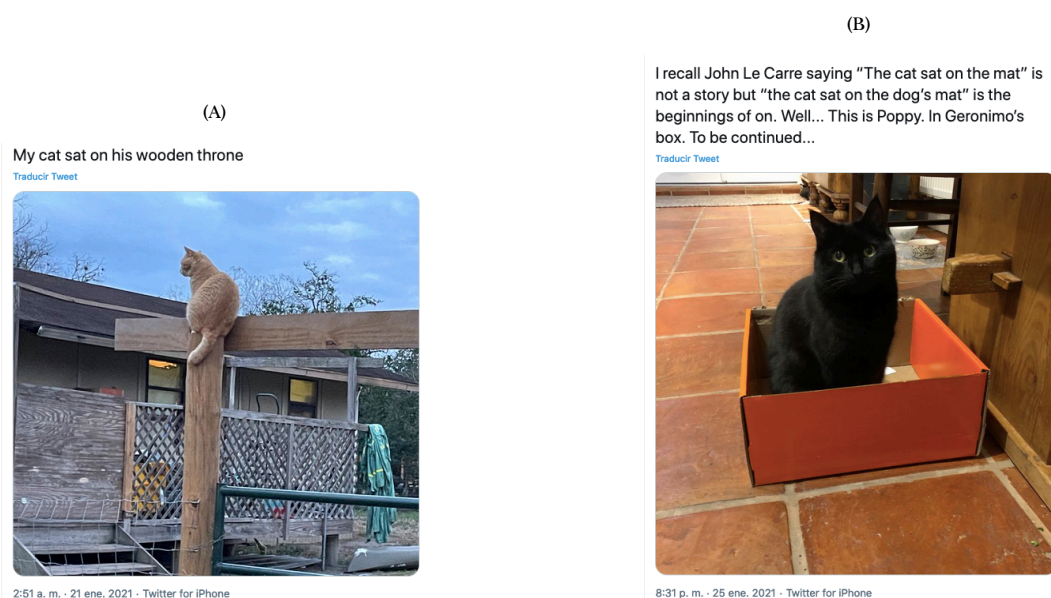
The details of a standing quadruped are illustrated in Figure 2.10. Like in the illustrations for a human sitting or standing, the thick red line is representative of a horizontal surface and the angle of the legs and torso are indicated by green arrows.



FIGURE 2.10: Non-human posture: *stand*

In the illustrated cat of Figure 2.10, all four legs are in contact with a horizontal surface, represented by a thick red line.<sup>32</sup> This is the primary condition for the standing position. The angle of the torso to the legs, indicated by the green arrow, is just over 90 degrees. As seen in the discussion of the meerkat pose, not a canonical standing position, in Figure 2.8, the angle of the torso to the legs is different than for bipeds. The crucial aspect of the alignment is that the standing position reflects the walking position; the images in Figure 2.9 show this.

Next, we turn to the posture verb, *sit*. Figure 2.11 contains two tweets of two different cats in a sitting position.

FIGURE 2.11: Tweets of cats in sitting positions<sup>[g]</sup>

In both images of Figure 2.11, a cat is in a sitting position, which is confirmed by the Tweet. In Figure 2.11B the referent of *my cat* is described to be in a sitting position

<sup>32</sup>To most accurately represent the points of contact, the red line should be a horizontal plane. However, the illustrations are simple ones, so the line remains simple as well.

on a wooden throne, which here denotes a wooden pole. Although *throne* is used in an ironic way, carrying an inference that the cat rules a particular domain, the posture verb is used literally, as is seen in the image of the cat in a sitting position. In Figure 2.11A the referent of *the cat*, also referred to as *Poppy*, is seen in a sitting position in a cardboard box, and the Tweet similarly describes this.

What both cats have in common is that their rear ends and hind legs/paws are in contact with a horizontal surface. In addition, the angle of the lower torso with respect to the legs is 90 degrees or lower. Due to their anatomy as quadrupeds, the torso must be supported by the front paws, which explains why the torso-legs angle is smaller than for biped humans. It is unclear whether cats have knees proper, but the cats in the images of Figure 2.11 have legs which are folded upon themselves, i.e., legs which are bent. These two angles are entailed by the main point of support being the butt, and by the nature of their anatomy. These details of cats in a sitting position are illustrated in Figure 2.12.

FIGURE 2.12: Non-human posture: *sit*

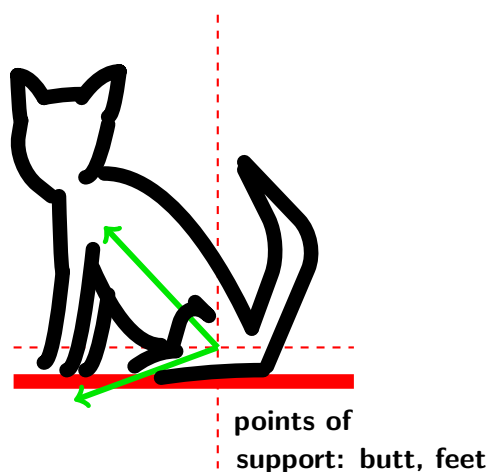


Figure 2.12 depicts a cat in a sitting position. The points of contact with the horizontal surface, represented by a thick red line, are the cat's butt, hind paws/legs and front paws. Due to the shape of the legs, and because an animal like a cat does not have abdominal muscles like a human, the butt being in contact with a horizontal surface necessitates that both the hind legs and front paws are in contact with the ground, with the front paws supporting the torso. This means that the angle of the lower torso and the legs is 90 degrees or less for quadrupeds, in contrast to a biped whose torso and legs can have a wider angle, such as when a biped leans back. Regardless of the angles, like with humans, the crucial point of contact is the butt; unlike with humans, and due to the nature of their anatomy, additional parts are in contact with the ground.

Finally, in the following Tweet of 2.13, there are two pictures of the same cat in a lying position. Across the two pictures, the cat is lying on a different side of its torso.

FIGURE 2.13: Tweet of a cat in a lying position [g]



In the two pictures of Figure 2.13, a fluffy cat is in a lying position in the user’s sink.<sup>33</sup> Its torso is completely in contact with the bottom of the sink. The legs are hidden by fluffy torso, and parallel to humans, the angle is irrelevant. Like in the previous subsection, I omit an additional illustration for the lying position.

To finish this discussion, the examples in (26) confirm that the core posture verbs combined with a quadruped like a cat are in fact used literally. The diagnostic of omitting the location was introduced in §2.1.2, where it was argued that only literal uses are well-formed with only a subject and a verb.

(26) *Location omissibility and cats*

- a. The cats stood.
- b. The cats sat.
- c. The cats lay.

All three location-less sentences of (26) are felicitous. These parallel the sentences we have seen with human subject referents. I take these data as evidence confirming non-human subject referents, such as mammalian quadrupeds, can combine with literal uses of the core posture verbs. These subject referents must be sentient and have the appropriate anatomy of at least feet, butt, and torso.

The core posture positions of quadrupeds are proposed in this subsection to parallel the core posture positions of humans, proposed in §2.2.2. Namely, the defining feature with respect to the subject referent’s alignment is the point of support. For both humans and non-human quadrupeds, the anatomical alignment of a standing position is a static parallel to the their walking position; that is, all available feet are the point of support. The nature of their respective anatomy determines the angle of the legs and torso. For both figure types in the sitting position, the point of support is the butt; for quadrupeds, their anatomy entails additional points of support when the butt is in contact with the ground. For both figure types in a lying position, the point of support is the torso and there are no other relevant differences between types. From a sitting position, it is a simple transition into a walking, or otherwise dynamic, activity, which is in contrast to

<sup>33</sup>This means that the horizontal surface is in fact not strictly horizontal; it is, however, not concave enough to contradict the claims.

the transition from a lying position. This transition possibility is crucial in the following discussion, when the proposed definitions are extended to other animals.

In all of the following examples, the relevant interpretation of the verbs is a literal one, where the subject referent is sentient; non-literal uses are addressed in §2.3. We begin with *stand*. According to the discussion above, the points of support are all available feet and this posture is the static complement to the position required for walking. Various animals, some with feet and some without, are combined with *stand* in (27). It is expected that at least those without feet are infelicitous.

(27) A {cat|(#)turtle|#dolphin|#snake|#fish|#spider} was standing in my backyard.

In (27), all but the cat are infelicitous with *stand*, and one, a turtle is marginally felicitous. Looking at the number of legs first of the infelicitous and marginal animals, we can see that turtles have four; dolphins, snakes and fish none; and spiders many. It is unclear whether one can say that turtles and spiders actually have feet at the end of their legs. With respect to their walking position, it would seem that the standing position reflects this position, with end of the legs on the ground. We can postulate for now that the lack of feet are the source of the infelicity, although this is amended below.

Next, we turn to *sit*. For this posture verb, the key point of contact is the butt, and according to the definition of butt assumed here (s. §2.2.1), the body must include legs for there to be a butt. In addition, the sitting position should be simple to transition into walking. The same animal referents from (27) are combined with *sit*, intended to be the literal use, in (28).

(28) A {cat|#turtle|#dolphin|#snake|#fish|#spider} was sitting in my backyard.

The only animal with a butt in (28) is the cat. Parallel to what we saw for *stand* in (27), only this animal is felicitous with *sit*. Unlike in (27), there are no marginal cases, even if, e.g., a turtle has legs attached to the main body. It seems that a real butt is required to be in a sitting position.

Finally, we look at *lie*, a verb requires that a torso is in contact with a horizontal surface. Inherent to this requirement is that the animal has a torso from which appendages extend; for, e.g., a snake there is no such torso. With the other two posture verbs, only a cat figure was a felicitous combination. Even though there are animals with bodies that could be described as torso-like, I expect that we see the same felicity pattern for literal *lie* in (29) as was seen for *stand* and *sit* in (27)–(28).

(29) A {cat|#turtle|#dolphin|#snake|#fish|#spider} was lying in my backyard.

As predicted, only the cat is a felicitous animal with literal *lie* in (29). Although there is a possible interpretation with the other animals in combination with *lie*, this would be a non-literal use, because the interpretation is that the animal is non-sentient, i.e., they are dead or unconscious. Even though that animal would be described to be aligned along the horizontal surface, its lack of sentience disqualifies it as a subject referent of the

literal use. This is possibly due to the fact that their natural resting position is not a lying position, although I submit here a connected idea. Namely, none of these animals are anatomically able to be in any of core posture positions. This lack of alternation leads to the impossibility of predicating posture of that animal. Therefore, the literal use of a posture verb is limited to sentient animals with the appropriate anatomy for any of the core posture, i.e., with feet, a butt, and a torso.

We saw above the location omission diagnostic applied to cats as the subject referent in (26). All three verb-cat combinations are felicitous, confirming that they are indeed literal uses of the core posture verbs. Considering the felicity patterns we have seen for the other animals in (27)–(29), it is expected that any felicitous combination of these other animals with the core posture verbs is a non-literal use. In the discussion of (29), I mentioned that these animals can combine with *lie* the property of being sick or dead ascribed to the subject referent. Let us see what happens when we omit the location on that interpretation. This is illustrated in (30).

(30) A {turtle|dolphin|snake|fish|spider} was lying #(on the ground).

In (30), none of the animals are able to felicitously combine with *lie* when there is no location. Even though a horizontal orientation is encoded, the active maintenance of the posture is not; I classify the uses of *lie* in (30) as non-literal. In §2.3.2, I examine a theory explaining why the omission of a location is not possible for sentences like (30).<sup>34</sup> One type of animal not fitting neatly into this generalisation is birds. Even though they lack a butt, they are often combined with *sit*. According to standard dictionaries such as Merriam Webster,<sup>35</sup> *sit* can indicate “perching”, which implies a thin, raised surface area for the ground, or “brooding”, which is done on a nest. Both of these positions are resting one, even if the points of support differ: feet for perching, torso for brooding. In addition, it is possible to describe some birds as resting in a standing position before/after walking. The third posture verb, *lie*, in contrast, is infelicitous, and returns a ‘dead bird’ interpretation. Examples are in (31)–(32) with two different bird types, having variable leg lengths, and different locations, with variable perching and brooding abilities.

(31) *Cranes and literal uses of the posture verbs*

- a. The crane was standing {on the railing|in the path}.
- b. The crane was sitting {on her nest|on the railing|#in the path}.
- c. #The crane was lying {on the railing|in the path}.

(32) *Hens and non-literal uses of the posture verbs*

- a. The hen was standing {(#)on the railing|#in the path}.
- b. The hen was sitting {on her nest|on the railing|#in the path}.
- c. #The hen was lying {on the railing|in the path}.

<sup>34</sup>As mentioned in §2.1.2, omitting the location with non-literal uses of *stand* or *lie* is infelicitous, while omitting it with *sit* is ungrammatical. This is due to the difference stages of diachronic change for each verb (s. Chapters 6–7 for theory on diachronic change and the analysis of *sit*’s current trajectory).

<sup>35</sup><https://www.merriam-webster.com>; last accessed 25 June 2022.

The crane referent in (31) has long legs which can bend, while the hen in (32) has short ones which do not bend. Both birds do not have butts, but both do lay eggs and rest on these eggs to keep them warm. Beginning with *stand*, we see that only the crane in (31-a) is felicitous with both locations, while the hen is marginally felicitous when described to be standing on a railway, i.e., similar to perching, but not in the middle of a path. For *sit*, the two birds pattern alike: *sit* is possible with a brooding, i.e., *on her nest*, or perching, i.e., *on the railing*, interpretations, but not when the ground has a large surface area. The possibility for a difference in leg-bendedness between standing and sitting positions allows for the crane to be described with both possibilities. For the shorter-legged hen, however, it is more difficult to achieve a felicitous reading for *stand*, unless the interpretation is that it is at the edge of a raised location. This suggests that, besides the idiosyncratic sitting combinations, a salient alternative to another resting position is required for standing to be felicitous.<sup>36</sup>

Besides the standing position, with the feet supporting the body, these types of animals cannot rest in a posture where the butt supports the torso; the sole alternate is that the torso itself is the point of support with the ground, and this can be expressed by using *sit* on the ‘brooding’ interpretation. There is no alternate and typical lying position for these animals, such as what is found with humans or, e.g., cats, where any side of the torso is in contact with the ground. Birds, not having the anatomy to transition out of such a lying position, are only lying on their sides or backs when they are dead or ill. As such, *lie* is infelicitous with bird subject referents, parallel to the other animals in (29). To be sure that these are literal uses, let us use the argument structure diagnostic introduced in §2.1.2. In those sentences where it is possible to remove the location, thereby promoting the posture component of the verb’s meaning, the use of the posture verb is considered to be literal.

(33) *Location omission with bird subject referents*

- a. The {crane|#hen} was standing.
- b. The {crane|hen} was sitting.
- c. #The {crane|hen} was lying.

The pattern of location omissibility in (33) is not consistent across all three verbs, nor for both bird types. When the location is omitted with *stand* in (33-a), only the crane referent is felicitous; this is parallel to the judgments in (32)-(33), where the crane was felicitously interpreted to be standing in different locations. This suggests that *stand* has a literal use with long-legged birds, but not shorter ones. When the location is omitted with *sit* in (33-b), both bird types are felicitous with the interpretation that the bird is sitting on the eggs. This is not necessarily a literal use, even though the location omission is possible: the interpretation is not encoding a sitting position, but rather the activity of brooding. It is unclear whether this can be the same as being at-rest. Finally, when the

<sup>36</sup>The similarity of perching, described with *sit*, to standing, described with *stand*, remains a puzzle. As this puzzle is not crucial to my claims, I leave it aside.

location is omitted with *lie* in (33-c), both bird types are infelicitous, indicating that there is no literal use possible.

This bird data in (31)–(33) indicate that when considering which animals can assume certain postures, the following two points are crucial: whether they are anatomically capable of transitioning into or out of another one of the core postures and what their natural resting posture(s) are. While at first passover, the bird data seem to confound the generalisation made in this subsection, this is not the case: For one, the standing position of the birds requires the feet to be the point of support. Even though the position of a bird described with *sit* can be parallel to the lying position of bipeds and quadrupeds, i.e., with the torso being the point of support, this data point is informative, because it demonstrates that *lie* is possible only when there is another salient, and natural, resting posture available. Just as we saw with the other animal types in (29), animals without the anatomy for sitting or standing cannot be described as actively being in a lying position; instead the interpretation is a non-literal one. In contrast, a quadrupedal cat has the appropriate anatomy to assume all three postures and to transition in/out of them, and is hence a felicitous subject referent of all three verbs.

In conclusion, this subsection has demonstrated that non-humans can be referents of literal posture verb uses, as long as they meet certain requirements. A pre-condition is that the animal is sentient and capable of transitioning into and out of the relevant posture. Following this, the anatomical requirements were laid out for each posture, first using mammalian quadrupeds as an illustrative example, then examining other animal types. The data with the latter group showed that not many animals can actually be described with the literal uses, because non-mammals do not have butts. Birds, while butt-less, are a special case, with idiosyncratic interpretations with *sit*, and a bird-dependent possibilities with *stand*; these animals are always infelicitous with literal uses of *lie*.

My proposal of literal posture in this section departs from previous theory, in particular from Newman (2002), in explicitly including non-humans, and in systematically defining what literal posture looks like. The next section looks at what has been previously claimed for uses of posture verbs not necessarily predicating posture of their subjects.

## 2.3 Beyond posture

In the previous section, I defined literal posture, building on insights from the cognitive literature. I showed that both human and non-human referents can be the subjects of literal posture uses, but that the referent must meet the anatomical requirements of each posture position. Besides humans, the typical eligible animals are mammalian quadrupeds, and their alignment for each of the core posture verbs mirrors humans. That is, there is a defining point of support for each posture position, which correlates with an essential body part: all possible feet for *stand*, the butt for *sit*, and the torso for *lie*. The previous section also looked at other animals in combination with the core posture verbs. It was found that in addition to the appropriate anatomy, it is important that the

subject referent is capable of transitioning into and out of two or more postures; cats can be in standing, sitting, and lying positions, while, e.g., dolphins cannot. If they are not able to do so, core posture cannot be predicated of them. It was mentioned that some infelicitous instances of, e.g., *lie* with butt-less animals contribute a different interpretation, that the animal is dead or extremely ill. Literal uses were confirmed with the location omission test from §2.1.2, a test which is applied throughout this thesis.

In the current section, the discussion turns to previous literature on non-literal uses of the posture verbs, where “non-literal” applies to those uses which are transparent/compositional, and therefore not idiomatic (§2.1.1). Additionally, they do not describe the referent of the subject as actively maintaining a posture position during the reference interval, but rather that the subject referent does not move from the overall location.<sup>37</sup>

As was pointed out in §2.1, while *stand* and *lie* share features with non-literal *sit*, the former still encode orientation of their subject referent. This is additionally reflected in how omitting a location is merely infelicitous for *stand/lie*, but ungrammatical for *sit*.

Typically in the literature, a distinction is made between posture verb uses which encode a human maintaining a particular posture and those which locate the referent of a subject without necessarily encoding posture. In this dissertation, I deviate from the previous literature by moving away from the characterisation of non-literal uses as only locative or spatial in nature. This deviation is based on synchronic corpus data, presented in Chapter 3, where it was found that locations are not the only possible postverbal material appearing with the non-literal uses. In particular, postverbal adjectives are observed with each of the core posture verbs, an observation which to my knowledge has not been made before. This postverbal category is incorporated into the synchronic proposal in Chapter 5 and is additionally crucial to the diachronic proposal in Chapter 7. For the literal uses, which do not require postverbal material, it is argued that postverbal adjectives and locations are adjunctive; for the non-literal uses, which do require the postverbal material, it is argued that postverbal adjectives or locations are both predicative components. However, before defending a proposal that deviates from the previous accounts, an overview of the accounts is necessary.

We begin the discussion again with observations from Newman (2002), whose work is considered a standard on posture verbs. In those uses not describing a sentient being, which for Newman comprises a human maintaining a particular posture, the use is said to be a LOCATIVE EXTENSION of the verb (2002: p. 7). In this case, “extension” is meant to reflect that the meaning components of the literal use are also found in this non-literal use, and “locative” to reflect that these expressions usually describe the location of the figure with respect to the ground.<sup>38</sup> According to Newman, the figure is usually positioned in a way that reflects the original concepts, such as spatial orientation along an axis, described in §2.2.1. The examples from Guirardello-Damian (2002) in Newman’s

<sup>37</sup>This lack of movement is explored in more detail in §2.3.3.

<sup>38</sup>Authors such as Newman (2002) give the impression that these locative extensions are confined to inanimate subject referents only. I show in Chapter 4 that at least for *sit*, there are some subject types which can be animate as well.



edited volume in (34) demonstrate this; they are repeated from (25) above, and the posture verb is boldfaced in the original and glossed lines.

(34) *Extension of the SPATIO-TEMPORAL domain*

- a. Tehnene-n tahu yi **la**.  
 floor-LOC knife yi be.**standing**  
 (lit. ‘the knife is **standing** in the floor.’)  
 ‘The knife is inserted into the floor.’
- b. Mesa natu-n ka\_in iŵir yi **chumuchu**.  
 table back/top-LOC FOC/TENSE stick yi **lie**  
 (lit. ‘the stick **lies** on top of the table.’)  
 ‘The stick is on the table.’

[TRUMAI; From Guirardello-Damian 2002, pp. 159, 162 ]

In (34-a), the figure, a knife, is described as being located in the ground, the floor, and in (34-b), the figure, a stick is described as being on the ground, the table. Due to the use of ‘stand’, the figure in (34-a) is understood as being vertically oriented, and due to the use of ‘lie’, the figure in (34-b) is understood as being horizontally oriented. In English, if the literal translations are used with the posture verbs, the same interpretation of orientation is available. This is in line with the data in §2.1 which showed that non-literal *stand* and *lie* still encoded orientation, even if the subject referent itself is unable to move itself. Additionally, I argued in §2.1 that non-literal *sit* does not encode orientation, in contrast to *stand* and *lie*. There are many documented examples where *sit* is described as locating the subject referent somewhere, but without an orientation or posture entailment of that referent. This is shown in (35); both examples are cited in Newman (2002, p. 11).

(35) *Non-posture-encoding uses of ‘sit’*

- a. maʔási-lo ʔáti rúa **di-sóaʔi**  
 sea-in canoe two 3PL.REALIS-**sit**  
 (lit. ‘Two canoes **sit** in the sea.’)  
 ‘There are two canoes in the sea.’ [ MANAM; Litchenberk 1983, p. 498 ]
- b. šampat coka oofan **léékiis**  
 basket.SUBJ house inside.OBJ **sit**  
 (lit. ‘The basket **sits** inside the house.’)  
 ‘The basket is in the house.’ [ CREEK; Watkins 1976, p. 21 ]

In (35-a), the figures are two canoes and the ground is the sea; in (35-b), the figure is a basket and the ground is a house. In both sentences, the figure is described as being located with respect to the ground, and there is no indication in the source text that this sentence describes the posture, or orientation, of the figures. For both examples of (35), it would be possible to use the literal translation in English. Additional English examples of non-posture-encoding uses of *sit* are in (36), from Newman (2002).<sup>39</sup>

<sup>39</sup>The judgments of (36-d)–(36-g) are marked with ‘?’ in the original text. However, according to my own native speaker intuitions, these are well-formed; my intuitions are corroborated with naturally-occurring examples and similar subject referents, reported in Chapter 3.

- (36) *Non-posture-encoding uses of sit*
- a. The {computer|printer|telephone|TV} **sits** on a desk at home.
  - b. Our {family photo|a precious vase|a little statue|an old lamp} **sits** on the piano in our house.
  - c. The new satellite **sits** above the Pacific.
  - d. ?Our {double-bed|coffee table|chair} **sits** next to the window in the bedroom.
  - e. ?The mattress **is sitting** on the floor.
  - f. ?The skyscraper **sits** on a corner.
  - g. ?The clothes are **sitting** on the floor.

[ Newman 2002, p. 7 ]

In all the examples of (36) the figure is described with respect to the ground. According to Newman (2002), even when the figure is more vertical, like the statue or lamp in (36-b) or the skyscraper in (36-f), or when the figure has “legs” like the furniture in (36-d), the sentence is well-formed with *sit*.

Other authors in the cognitive and typological literature describe the cross-linguistic tendencies of configurations like those in (34)–(36), i.e., of the non-literal uses of posture verbs. In particular, this line of theory categorises languages based on how the grounds of artefact figures are encoded in that language. §2.3.1 addresses these accounts.

In 2.1.1, it was noted that the literal uses can appear without any postverbal material, while the non-literal uses require a postverbal component. This is shown in (37), using the same sentences from (36).

- (37) *Non-posture-encoding uses of sit*
- a. The {computer|printer|telephone|TV} sits \*(on a desk at home).
  - b. Our {family photo|a precious vase|a little statue|an old lamp} sits \*(on the piano in our house).
  - c. The new satellite sits \*(above the Pacific).
  - d. Our {double-bed|coffee table|chair} sits \*(next to the window in the bedroom).
  - e. The mattress is sitting \*(on the floor).
  - f. The skyscraper sits \*(on a corner).
  - g. The clothes are sitting \*(on the floor).

In the sentences in (37), the lack of a postverbal location seems to force a posture reading of the subject. However, these subjects do not have the anatomy to be in a particular posture position. This observation was put forth in Fraser (2018), based on previous accounts in the German literature on posture verbs, in particular Maienborn (1990, 1991). This literature is discussed in §2.3.2. In that subsection I argue that the omissibility of locations is consistently seen with the literal uses of all three verbs, and inconsistently with the non-literal uses of *stand* and *lie*; the non-literal use of *sit* must always have either a location, or as I argue in this thesis, adjective. The empirical insights of the literature

discussed in §2.3.2 support my claim introduced §2.1, that non-literal *sit* has advanced further in terms of diachronic change than non-literal *stand* and *lie*. This claim will be further corroborated by corpus data in §3.2.

Finally, in §2.3.3, I compare the eventive properties of the core posture verbs and how certain properties remain stable across the literal/non-literal divide. In particular, a core meaning component, aspect, and argument structure are examined. The results of this subsection are important because they confirm claims in the literature, that aspectual features of non-literal uses are reflective of their literal counterparts (McNally & Spalek, 2022), and that argument structure can vary between literal uses and non-literal uses (Searle, 1978; Spalek, 2014, 2015). The stability of the core meaning component across all three uses is demonstrative of the in-progress nature of these verbs' diachronic trajectories.

### 2.3.1 Posture verbs in the Basic Locative Construction

This subsection looks at how non-literal uses of posture verbs have been described in the cognitive and typological literature on spatial descriptions. The Basic Locative Construction, “BLC”, is an important concept in this literature, especially when discussing the different ways languages encode static spatial relations. The term is most often attributed to Levinson & Wilkins (2006a, §1.5.1) and is understood by them to mean the expressions<sup>40</sup> which are unmarked responses to the question ‘Where is X?’. The prototypical scene is considered to comprise a “moveable object on a restricted surface” (Levinson & Wilkins, 2006a, p.16), which correlates with the concept of figures, and how they are moveable entities. First, I present the BLC and ways of eliciting cross-linguistic data, then I discuss how the current characterisation of English posture verbs is inaccurate.

Researchers frequently elicit BLC data by using two series of pictures illustrating topological relations and by asking at least three native speakers (Levinson & Wilkins, 2006a, p. 9).<sup>41</sup> For static relations, the most common picture series is the seventy-one line drawings in the Topological Relations Picture Series, “TRPS”, *inter alia* “BowPed”, (Bowerman & Pederson, 1992). There is additionally the Picture Series for Positional Verbs, “PSPV” (Ameka et al., 1999), with sixty-eight photographs, meant to be used alongside the TRPS. Namely, the data elicited by the TRPS series focusses on the adpositional component of the spatial relation, whereas the data elicited by the PSPV focusses on the contrasting posture verbs, as suggested by the name of the series. As the sole aim here is to describe what is meant by BLC, I only present examples using the TRPS.

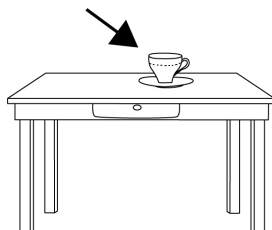
In the TRPS series, the figure is indicated by a large arrow; the ground is not explicitly signalled, but it is typically the only other object in the scene. The participant is encouraged by the investigator to express the location of the figure with respect to the ground, first with the ‘Where is X?’ question, then with further discussion as determined to be needed (s. Levinson & Wilkins 2006a and the instruction manual for the TRPS data in

<sup>40</sup>In their words, these are the “constructions” (Levinson & Wilkins, 2006a, p. 15).

<sup>41</sup>See studies in the volumes edited by Levinson & Wilkins (2006b) and Ameka & Levinson (2007) for examples.

Bowerman & Pederson 1992). For example, in Figure 2.14, the figure is a cup<sup>42</sup> and the ground is a table.

FIGURE 2.14: TRPS 1



In (38), sentences from various languages are listed, representing different possibilities of expressing the BLC, boldfaced in each, of the scene displayed in Figure 2.14 above. The final line, (38), displays the English translation applicable to all the preceding sentences.<sup>43</sup> These cross-linguistic examples are sourced from the edited volumes of Levinson & Wilkins (2006b) and Ameka & Levinson (2007).

- (38) a. (Kaputi-wa) iya ede tebolo-ne unai.  
 cup-given 3SG PRSUP table-DET POSTPOS.SG  
 [ SALIBA; Dunn et al. 2007, p. 875 ]
- b. kap meejaiyil **irukkiRatu**  
 cup table-LOC COP-PRES-3SG  
 [ TAMIL; Pederson 2006, p. 404 ]
- c. kapî tepîli u mbêmê ka **kwo**  
 cup table its on\_top DEF.3SG.PRES.CONT stand  
 [ ROSSEL; Levinson 2006, p.173 ]
- d. **pachal-ø** ta ba mexa te ala baso-e  
 bowl\_shaped\_sitting-3ABS PREP top table DET DIM cup-CL  
 [ TZELTAL; Brown 2006, p. 245 ]
- ‘(The cup/it) is on the table.’

In each of the BLC sentences of (38), a different strategy is used to encode the spatial relation depicted in Figure 2.14. In (38-a), the Austronesian language Saliba has a verbless BLC, as reported in Dunn et al. (2007). The sentence includes a particle, *ede*, glossed as ‘presuppositional marker’;<sup>44</sup> there is also a postposition, *unai*, which indicates the number of the NP figure, in this case singular. According to Dunn et al. (2007), there is no explicit grammatical indication of location or spatial relation, and therefore no boldfaced material appears in this sentence. In (38-b), the Dravidian language Tamil has a single verb BLC, i.e., a copular verb is used, and the NP representing the ground is marked

<sup>42</sup>Technically, the figure is a cup and saucer, but in most of the examples I have seen, the answer comprises only ‘cup’ as the figure.

<sup>43</sup>Based on the labels listed for each source paper, I have tried to unify the labelling for the sake of readability and consistency; e.g., any gloss of ‘present tense’ is now PRES. The content of the labels, however, has not been altered.

<sup>44</sup>It is unclear how the presuppositional marker functions semantically or syntactically, and the accompanying text does not elucidate much. Based on the couple of other examples in the Saliba section of Dunn et al. (2007, §2), one could even speculate that *ede* is a copular verb.

with LOC case, as is reported in Pederson (2006). The example from the Austronesian language Rossel in (38-c) and another from the Mayan language Tzeltal in (38-d) both encode spatial relationships using multiple possible verbs; Levinson (2006) reports that in Rossel the set of available verbs is limited to ‘sit/lie’, ‘stand’, and ‘hang’, whereas Brown (2006) reports that in Tzeltal the set is much larger. This difference is visible in the gloss of each: the Rossel verb *kwo* is glossed as ‘stand’, while the Tzeltal verb *pachal* is glossed as ‘bowl\_shaped\_sitting’, i.e., with more details about the spatial properties of the figure. The BLC sentences of (38) represent the four basic types of the BLC in the typology proposed by Levinson and colleagues. The types are outlined in Table 2.5, with the languages of the examples above boldfaced.

TABLE 2.5: Basic types of locative predication in an unmarked locative statement (after Ameka & Levinson 2007, p. 864)

Type	Description	Exemplary Language(s)
0	No verb in basic locative construction	<b>Saliba</b>
I	Single verb, usually a copula	<b>Tamil</b> , English, German, Japanese
II	Small, contrastive set of locative verbs	<b>Rossel</b> , Guugu Yimithirr, Dutch
III	Large set of dispositional verbs	<b>Tzeltal</b> , Likpe, Zapotec

Each type of Table 2.5 corresponds to the sentences in (38). That is, the verbless construction of Saliba is in (38-a), the single verb type of Tamil is in (38-b), the type with a small set of locative verbs is with Rossel in (38-c), and the type with a large set of dispositional verbs is with Tzeltal in (38-d). Note that Ameka & Levinson (2007) distinguish between Type II and III in terms of number of verbs in the set: Type II languages have 3–7 verbs, usually corresponding to the core posture verbs, while Type III languages have anywhere from 9 to 100 verbs available for the BLC.

A consequence of this methodology is that some commonly occurring expressions which also encode location might be overlooked. That is, the question-answer template could be said to prime the verb included in the answer. In addition, in (39), an in-text example from Levinson & Wilkins (2006a, p. 15), the authors claim the response in (39-a) is an eligible BLC, whereas the one in (39-b) is not—even though both describe the location of a figure at the ground.

- (39) Where is the cathedral?
- a. It’s in the central square.
  - b. The cathedral stands at the heart of the old city, overlooking the Rhine.

In both answers of (39), the figure is a cathedral. However, that is as far as the minimality of the pair goes. Namely, the ground in (39-a) is *the central square*, while the ground in (39-b) is the more flowery phrase *at the heart of the old city, overlooking the Rhine*. Also the forms of the subjects are different: in (39-a) the subject is a pronoun and in (39-b) the subject is a DP, *the cathedral*. It is marked to repeat the subject of the question, which

means that (39-b) is already marked as an answer, regardless of the verb choice. The data in (39) are thus misleading.

Ideally, a generalisation about BLC should be based on minimal pairs. This is not the case in (39), considering the register and subject form differ between (39-a) and (39-b). On top of that, the chosen figure is curious considering the definition of BLC provided above. Namely, the prototypical scene described by BLC involves a moveable object. This means that on their own definition of BLC, the question-answer pair in (39-a) is not actually eligible, contradicting the discussion in Levinson & Wilkins (2006a, p. 15). In (40), an example with a moveable figure and minimal pair, we can see that posture verbs are felicitous in response to the BLC question.

- (40) Where is my scarf?  
 a. It is (sitting|lying) on the sofa.  
 b. Your scarf is (sitting|lying) on the sofa.

The minimal pair in (40) only differs in the explicit naming of the figure: in (40-a), the figure is the referent of the pronoun *it*, while in (40-b) it is the referent of the DP *your scarf*. Because the figure is named in the question, it is marked to repeat it in the answer. Otherwise both sentences are acceptable English sentences. This data suggest that it is possible to use a posture verb like *sit* or *lie* or the plain copula *be* in both sentences, contradicting the typology proposed in Table 2.5. That is, English might actually be a Type II language, not a Type I language like Table 2.5 suggests.

There are studies on Germanic languages which show that typical Type I languages actually often use posture verbs for spatial expressions, even to the point that their authors describe the expressions as instantiations of the BLC in the respective languages (Kutscher & Schultze-Berndt, 2007; Berthele et al., 2015). A German example describing the scene in Figure 2.14 is in (41); this sentence was elicited within a study from Kutscher & Schultze-Berndt (2007), according to the guidelines outlined above.

- (41) Die Tasse **steht** aufm Tisch  
 the cup stand.3SG.PRES on.the table  
 (lit. ‘The cup **is standing** on the table.’)  
 ‘The cup is on the table.’

[ GERMAN; Kutscher & Schultze-Berndt 2007, p. 996 ]

What the sentences in (40)–(41) demonstrate is that there are more possibilities for Type I languages than Table 2.5 suggests. In addition, Kutscher & Schultze-Berndt (2007, p. 1016) report that while the copula *sein* ‘to be’ is “readily accept[ed]”, participants used *sein* instead of a posture verb in only 25 out of 544 responses. In other words, it is not clear why there is a categorical difference between Type I and Type II languages, based on the criteria provided in the literature. If anything, it seems this typology might be better suited on a spectrum of available verbs for the BLC, from a set of no verbs to a set of 100 verbs.

In this subsection, I have presented a traditional view of categorising languages based on the strategies for encoding spatial relations. In many languages, such semantic information is encoded by posture verbs, although the distribution of posture verbs varies cross-linguistically. These uses of posture verbs are non-literal ones, insofar as they are not idiomatic. By positing discrete categories, the BLC typology proposed by Levinson and colleagues overlooks some important generalisations about English and German. Even though these languages have a small set of posture verbs, i.e., the three core ones, which can be used to encode spatial relations, in the BLC typology in Table 2.5, these two Germanic languages are listed as using only the copula. The examples in this subsection suggest that the BLC categorisation is too strong. As is shown in this thesis, the non-literal use of posture verbs often encode a spatial relation like the BLC does, and can do so for a number of subject types. In addition, corpus data presented in Chapter 3 demonstrates that the non-literal uses are not limited to spatial relations; sometimes they appear with postverbal adjectives, which ascribe non-spatial properties to their subjects. As mentioned before, this variety of postverbal material motivates my analysis of non-literal *sit* as a copular verb (s. Chapter 5); the non-literal uses of *stand* and *lie* are on their way to be reanalysed as copular verbs as well (s. Chapter 6 on general diachronic theory and Chapter 7 on my diachronic analysis of *sit*). In the next subsection, the discussion turns to formal literature on the role of the postverbal locative.

### 2.3.2 Posture verbs and an account of postverbal locations

In the previous subsection, a descriptive generalisation about the non-literal uses of posture verbs was presented. This generalisation is based on typological data (s. the articles in Levinson & Wilkins 2006a; Ameka & Levinson 2007); languages like English and German are said to predominantly use the copula to encode spatial relations. However, as I argued there, it is actually possible to find many examples with non-literal uses of posture verbs encoding the location of a figure with respect to a ground. In the present subsection, the discussion turns to previous work on posture verbs in the formal literature. In particular, in the German generative tradition, the posture verbs are grouped together with other locative verbs such as motion verbs and causative positional verbs (Bierwisch, 1988; Wunderlich & Kaufmann, 1990; Maienborn, 1990, 1991; Kaufmann, 1995, a.o.). Focussing on the posture verbs only, this subsection discusses Maienborn's account of the differences in optionality of the postverbal location.<sup>45</sup>

A discussion of this account has been included for the following reasons. For one, Maienborn (1990, 1991) is often cited in discussions concerning the postverbal location of posture verbs. She argues that the location can be omitted when the posture of the subject

<sup>45</sup>The account discussed here concerns both literal and non-literal uses of the verbs—even if the author does not look at the data from a perspective considering indeterminate meaning. That is, there is no explicit categorisation made with respect to the literal/non-literal divide. Instead, idiosyncrasies based on conceptual knowledge of the arguments are credited for grammatical variation, as we will see in the discussion below. Contrary to the account presented in this subsection, my own analysis argues for indeterminate meaning of the posture verbs, on the basis of systematic, not idiosyncratic, differences. The data presented in this subsection additionally support a split view of the posture verb class, along the literal/non-literal divide.

is emphasised, which, as we see below, is described as possible when the subject referent is a sentient human or the referent is clearly aligned along the horizontal or vertical axis. Building on this claim, in Fraser (2016, 2018) I argued that the non-literal uses of the posture verbs always require a location, while it is optional for the literal use. My analysis in this thesis departs from both Maienborn (1990, 1991) and Fraser (2016, 2018), in that here I account for postverbal adjectives in addition to the locations (s. Chapter 5). Secondly, as introduced in §2.1, I identify *stand* and *lie* as being less advanced diachronically in their non-literal uses than *sit* is, modifying the analysis in Fraser (2016, 2018). That is, *stand* and *lie* encode orientation in the non-literal use, and there are instances where a location or adjective is not obligatory (s. §2.1.2), demonstrating that they have not been fully reanalysed as copular verbs like *sit* (s. Chapter 5). Those instances where the postverbal material is not obligatory for *stand* and *lie* are addressed by the account discussed here. In addition, although the data discussed by Maienborn (1990, 1991) is based on German data, there are cross-linguistic insights to be gained from these claims.<sup>46</sup> Maienborn (1990, 1991) claims that the location of a posture verb is an argument, but if it is not syntactically realised it can be existentially bound (Maienborn 1990, §4.1.4–4.1.5; Maienborn 1991, §5). More specifically, she states that “If the locative argument remains unspecified, the concrete location will be abstracted away from because this is evaluated as irrelevant in the utterance context, regardless of whether [the location] is known or not.” (Maienborn 1990, pp. 60–61).<sup>47</sup> First off, there is a theoretical mismatch between identifying the location as an argument and as possibly not syntactically realised. It would then seem that the location is an adjunct, not an argument, in those cases where it can be omitted. Maienborn argues that it is only possible to omit the location when the posture<sup>48</sup> of the subject referent can be foregrounded in a meaningful way. The eligible contexts are those where it is conceivable that the posture of the subject can change. Whether or not it makes sense conceptually depends on both the context and the respective conceptual representations, such as the image schema discussed in §2.2.1. I provide examples from Maienborn, with her judgments, in (42) to illustrate her claims.<sup>49</sup>

(42) *German posture verbs without a postverbal location*

- a. Rita {steht| liegt}.  
Rita stands lies  
'Rita is {standing|lying}.'
- b. Der Schrank {steht| liegt}.  
the cabinet stands lies  
'The cabinet is {standing|lying}.'

<sup>46</sup>In fact the German verb *sitzen* 'sit' is hardly mentioned, besides a couple of examples with human subjects, suggesting that this verb has developed differently in German than in English.

<sup>47</sup>The original text, translated by me, KF, is: “Bleibt die sprachliche Spezifikation des lokalen Arguments aus, so wird von dem konkreten Lokalisierungsort abstrahiert, da dieser in der Äußerungssituation als irrelevant eingeschätzt wird, unabhängig davon, ob er bekannt ist oder nicht.”

<sup>48</sup>Maienborn refers to this component as the 'manner component'.

<sup>49</sup>The original texts discussed here are in German. The glosses and translations of in this subsection are my own, KF.



- c. Die Weinflasche {steht| liegt}.  
the wine-bottle stands lies.  
'The wine bottle is {standing|lying}.'
- d. \*Das Zimmer liegt.  
the room lies  
Intended: 'The room is {lying}.'
- e. \*Der Berg steht.  
the mountain stands  
Intended: 'The mountain is {standing}.'

[ GERMAN; adapted from Maienborn 1991, pp. 101–102 ]

The sentences in (42-a)–(42-c) are judged as well-formed without a postverbal location. On the account in Maienborn (1990, 1991), this means that the posture can be foregrounded in the well-formed sentences in (42-a)–(42-c), but not in those judged as ungrammatical in (42-d)–(42-e). The relevant conceptual components which allow posture verbs to be emphasised include a spatial configuration of the subject referent and the potential for this configuration to change. The human referent of the subject in (42-a) is described as maintaining the relevant position, following the literal definition established for the English counterparts in §2.2.2, and it is assumed that she can change this position. The inanimate referents in (42-b)–(42-c) are by definition non-sentient, and therefore cannot be understood as maintaining a standing or lying position, nor can they have put themselves into those positions. Nonetheless, these uses of *stehen* 'stand' and *liegen* 'lie' still encode an orientation along the vertical and horizontal axes, respectively, in the non-literal uses seen in (42-b)–(42-c). And although these inanimate entities cannot, in the real world, be responsible for changing their orientation, an external participant can do so. In contrast, the inanimate referents of the subjects in (42-d)–(42-e) cannot themselves change their position, nor can somebody else do so: rooms and mountains are stationary and their positions are unalterable.<sup>50</sup>

Despite this lack of alterability, Maienborn (1991, p. 102) argues that there are certain contexts that can license a stationary entity. The only example she gives is in (43), with an earthquake context.<sup>51</sup>

- (43) Das Haus steht.  
the house stands  
'The house is standing.'

[ Maienborn 1991, p. 102 ]

In the context of (43), where an earthquake destroyed many buildings and other infrastructure, there is now an alternative possibility for the house which did not get destroyed.

<sup>50</sup>In Chapter 4, based on data from the corpus studies in Chapter 3, I incorporate such entities into the proposal, calling them immovable.

<sup>51</sup>There are other contexts which would license this. For example, if a house was being constructed, it is possible to utter (43) once it has been completed.

That is, the vertical orientation of the house correlates with its survival during the disaster, and the use of *stehen* ‘stand’ contrasts with the alternate possibility of the house having been destroyed. This is in contrast to a neutral context, where orientation of the house would be evaluated without appealing to an alternative possibility.<sup>52</sup>

Related to context-dependency, Maienborn (1990, 1991) additionally argues that a posture verb’s postverbal location is syntactically optional, but semantically obligatory, and that an utterance without a location would not be judged as ungrammatical. Rather, it would be able to be judged as well-formed so long as the locative information is conceptually reconstructable or otherwise extractable from the context. In her approach, the ability to reconstruct this information is verb-dependent. The examples in (44) are from Maienborn (1991); in each, the relevant verb is boldfaced.

(44) *Locative information in the context*

- a. Ich muss um 10 Uhr an der Uni sein. **Fährst** du mich?  
 I must at 10 o’clock at the university be **drive** you me  
 ‘I have to be at the university at 10 o’clock. Will you **drive** me?’
- b. Ich habe ihr das Buch ins Fach gelegt. \*Es liegt immer noch.  
 I have her the book in-the mailbox laid it **lays** still  
 Intended: ‘I put the book in her mailbox for her. It is still laying.’

[ GERMAN; Maienborn 1991, p. 100 ]

Each example of (44) contains a first sentence which provides locative information relevant for the second sentence. In (44-a), the first sentence establishes that the relevant location is the university. In the second sentence of (44-a) with the motion verb *fahren* ‘to drive’, that final location, i.e., the goal, is reconstructable from the context. This is in contrast to (44-b), which contains posture verbs and which cannot reconstruct locative information from the preceding sentence. In (44-b) the relevant established information in the first sentence is ‘in her mailbox slot’. For the posture verb in the second sentence, this location is a stationary place, and the sentence is judged to be ungrammatical without that location being explicitly mentioned. This pattern holds for the English versions of these sentences; i.e., a motion verb like in (44-a) is grammatical without a location and a posture verb like in (44-b) is ungrammatical without a location. While these data showed there is a difference between types of locations, the explanation of conceptual reconstructability is rather idiosyncratic in nature, and not being systematic, it lacks predictive power.<sup>53</sup>

Before closing the subsection, let us consider the English posture verbs and how the claims relate to them in their literal and non-literal uses. The sentences in (45) are variations on the sentences in (42).

<sup>52</sup>While the non-neutral context does play a role, it is more likely an emphasis on the verb which triggers the necessary contrast, thereby licensing the sentence. As is discussed in §7.2.2, emphasis or focus, especially when it is more contrastive, is responsible for numerous phenomena, including syntactic variations.

<sup>53</sup>Kaufmann (1995, p. 90) also critiques Maienborn’s theory by comparing locative verbs to transitive verbs with optional postverbal material. More specifically, she argues that transitive verbs like ‘eat’ and ‘draw’ can omit their direct object arguments always, while locative verbs cannot. In this way, there is no dependence on whether the missing argument can be reconstructed from the context.

(45) *Moveable subjects and the omissibility of postverbal locations*

- |    |  |             |
|----|--|-------------|
| a. | Rita is {standing lying} (in the hallway).             | LITERAL     |
| b. | The cabinet is {standing lying} #(in the hallway).     | NON-LITERAL |
| c. | The wine bottle is {standing lying} #(in the hallway). | NON-LITERAL |

Unlike with the German sentences in (42), only the literal uses are well-formed with a missing location in the context-less sentences in (45-a). The non-literal uses in (45-b)–(45-c), on the other hand, are ungrammatical without the location, even though the orientation of the subject referent is encoded, and this orientation could potentially change. However, this is not the whole story: the non-literal uses of *stand/lie* can be used in sentences where the orientation is contrasted. This is shown in (46).

(46) *Non-literal uses and contrast of posture*

- a. The cabinet is standing, not lying.
- b. The wine bottle is lying, not standing.

In both sentences in (46), the referents of the subjects are described to be oriented horizontally, and there is an explicit contrast to a potential vertical orientation. The sentences in (46) confirm the explanation of contrastive posture in Maienborn (1990, 1991), as well as the idea that *stand* and *lie* encode orientation in their non-literal uses. However, those sentences in (45-b)–(45-c) call into question to what extent the postverbal location in the non-literal uses really is optional for non-literal *stand* and *lie*. That is, omitting the location for non-literal *stand* and *lie* is infelicitous, while omitting it for the literal use is felicitous; this indicates that there is some structural difference, possibly a diachronic change in progress, between the two uses. In addition, the data from the corpus studies show that it is rare to find these uses without postverbal material. I argue in this thesis that *stand* and *lie* are diachronically less advanced than that of *sit* (s. Chapter 7).

For *sit*, the English posture verb whose non-literal sense is further from the literal one, neither can the location be omitted, nor can the posture be targeted in a contrastive clause. This is shown in (47).

(47) *Non-literal sit.*

- a. A bottle of Rioja is sitting \*(in the cabinet).
- b. ??A bottle of Rioja is sitting, not standing.

The sentence in (47-a) is well-formed with postverbal material like the location *in the cabinet*; without it, the sentence is ungrammatical. The sentence in (47-b) is odd, and demonstrates that there is no meaning component of orientation/posture in the non-literal use of *sit*. In other words data like (47-b) support my claim that the non-literal use of *sit* is different than that of *stand* and *lie*.

In sum, Maienborn (1990, 1991) accounts for the omissibility of a postverbal location with German posture verbs, by arguing that the location can be omitted when the posture is emphasised or is reconstructible from the context. While I do not adapt the same

explanations in this thesis, I build on the empirical insights for my own account which explicitly divides literal uses from non-literal uses. Namely, I propose that the literal uses of all three verbs can appear without any postverbal material such as a location, because these locations are adjunctive; the non-literal uses of *stand* and *lie* can sometimes appear without any postverbal material, but these are constrained instances where the encoded orientation of the subject referent is foregrounded. In contrast, non-literal *sit* can never appear without any postverbal material, and I account for this in Chapter 5 by showing that *sit* is in fact a copular verb. The non-literal uses of *stand* and *lie* represent a change in progress, in between their literal use and what *sit* is in its non-literal use.

In the next section, the eventive properties of the literal and non-literal uses of English posture verbs are compared, building on the information presented so far. These constructed examples are supplemented by naturally-occurring ones of all three verbs in Chapter 3 and *sit* only in Chapter 7.

### 2.3.3 Eventive properties across the literal/non-literal divide

In this subsection, eventive properties of the posture verbs are compared to each other and across the literal/non-literal divide. I address the eventive properties here in a comparative manner for a couple of reasons. For one, after the corpus studies in Chapter 3, my discussion and analysis focusses on *sit*, leaving aside the other two verbs. This is because *stand* and *lie* represent changes-in-progress, where orientation of the subject referent is still encoded and postverbal material can sometimes be omitted, while non-literal *sit* has undergone structural and semantic change, not encoding any orientation and always requiring postverbal material. Even though those differences exist, these posture verbs still share a number of properties, some of which are consistent across the literal/non-literal divide. There are certain properties, such as aspectual category, which are expected to remain unchanged across the divide (McNally & Spalek, 2022), while others, such as argument structure details, which are expected to change (Searle, 1980; Spalek, 2014, 2015).

On top of these eventive properties, this subsection concerns the shared meaning component of the two uses. Even though I argue here that the indeterminate meaning of the posture verbs should be classified as ambiguity, not, e.g., polysemy or vagueness, all of the uses still encode a lack of movement of the subject referent.<sup>54</sup> It was pointed out in §2.1.2 that even though some ambiguous lexical items, e.g., *bank*, are unrelated in their current synchronic state, this does not exclude analysing items with related meaning as ambiguous. In the case of the posture verbs, the shared meaning is still present in the most advanced use, non-literal *sit*, because this verb has only recently been reanalysed, and the new meaning is still in synchronic variation with the original one (s. Chapter 6 on other diachronic possibilities, as well as Chapter 7 for my diachronic proposal).

<sup>54</sup>The discussion in this subsection concentrates on the content of the inference, not the status of that inference. The latter is addressed in §4.2.

As mentioned in the introduction to this chapter and again in §2.2.2–2.2.3, posture verbs are sometimes known as verbs which describe entities in “at-rest” positions (Newman, 2002). I build on this idea, proposing that the core meaning component of posture verbs comprises the subject referent not moving during the reference interval. More specifically, during that time, the figure does not move essential body parts that would lead to a change in the posture or movement from the ground. This subsection examines what this means for posture verbs across the literal/non-literal divide, and how being at-rest connects to traditional semantic theories about agentivity and stativity.

In the preface to Newman (2002, p. viii), he argues for the “commonality of the at-rest positions”, describing each of the core posture verbs in terms of how long the position can be maintained before the human subject is in motion again. That is, a sitting position is comfortable to maintain for a long period of time, which is in contrast to a standing position; a lying position is, in his view, associated not with an ability to maintain the position, but rather the lack of ability, as the position is strongly associated with the feebleness of the sick or the non-sentience of the dead. I argued in §2.2 that it is more important to consider whether the subject referent is able to assume the relevant posture, as well as transition into/out of it, rather than concentrating on maintaining that posture; the ability to assume the relevant posture is dependent on sentience and the appropriate anatomy, proposed in §2.2.2–2.2.3. Nonetheless, we still lack a systematic characterisation of “at-rest” and how precisely that contrasts with being in motion. In the following, I attempt to pinpoint what movement of the figure’s subparts is allowable when posture is predicated of that figure.

We begin the discussion with movements of the non-essential body parts. As was argued for in §2.2.2–2.2.3, the essential body parts are the feet, butt, torso, or legs, for *stand*, *sit*, and *lie*, respectively; hence, the non-essential ones for posture include the head, hands, and arms. In the sentences in (48), the core posture verbs are combined with movements of these non-essential parts.<sup>55</sup>

(48) *Posture verbs and movement of non-essential body parts*

- a. Giuseppe **sat** in the third row, and he was nodding so dramatically we could see him from the back row.
- b. Salvatore **stood** on the beach, talking animatedly to his brother about the surf.
- c. The brothers **lay** on opposite sofas, throwing crumpled wrappers at each other.

In each of the sentences in (48), the male figures are in one of the core postures. The descriptive meaning of the sentence includes a dynamic movement of the figures’ body parts: In (48-a), Giuseppe is somehow moving his head in a ostentatious way that it was visible to the speaker who was located in a different row. Nevertheless, it is still felicitous to say that this referent is in a sitting position, assuming he meets the other conditions

<sup>55</sup>These and the following examples are inspired by Dowty (1979, FN14, p. 190), who mentions that with the core posture verbs, subparts may move so long as the figure remains located at the ground.

proposed in §2.2.2. In (48-b), Salvatore is talking in a way that involves movement of at least the hands and possibly also the head; it is still possible to felicitously say that he is in a standing position. And in (48-c), the brothers are moving at least their arms, while maintaining the torso's contact with the sofa. In other words, the core postures are compatible with these minor movements of the head and arms or hands.

From §2.2.2, we know what conditions in terms of the point(s) of support and torso-legs angle must be met in order to be in a core posture position. Considering that a particular body part must maintain contact with a horizontal surface, one might think that the butt, feet, or torso is unable to be in movement for a sitting, standing, or lying position, respectively. However, the sentences in (49) suggest that minimal movement of the key body part is possible—as long as the figure's overall location remains unchanged.

(49) *Posture verbs and movement of essential body parts*

- a. The toddler **sat** wriggling in their seat.
- b. He **stood** in line, anxiously tapping his foot.
- c. She **lay** on the beach, sometimes kicking her feet in the air or moving her head to the music.

What unites the sentences of (49) is not only that there is a small movement of the key body part, but also that the person remains in the same location for the relevant time interval. That is, the young figure of (49-a) may be moving different body parts, including the butt, inside the confines of the seat, but they are nevertheless remaining in the seat in an overall sitting position: the legs and torso are bent at the hip joint and the butt is in contact with a horizontal surface. The male figure of (49-b) moved one of his feet in small, iterative movements, but overall, the legs and torso are not bent at the hip joint and the feet are in contact with a horizontal surface. The female figure of (49-c) periodically moved her legs, feet, and head, but in general the majority of her torso is described to be in contact with the horizontal surface; the position of her legs and torso are irrelevant. These examples indicate that small movements do not interfere with a felicitous description of literal posture—as long as the overall configuration is maintained and the figure does not move from the location.

Having covered the biggest parts of the human anatomy, let us now look at what happens when a vehicle containing the body is moving. That is, when there is an explicit change of location. The sentences in (50) are an example using all three posture verbs.

(50) They {**sat**|**stood**|**lay**} in a train racing along the tracks at 200 km/h.

The figures of (50) are described as being in one of the three core postures. The referents are located in a train, which is described as moving at a high speed. Regardless of the fact that the referents are technically in motion, the at-rest positions denoted by the core postures are felicitous. This changes once the person in the posture exerts themselves in some way, causing their own movement through space, as seen in (51)–(53).<sup>56</sup>

<sup>56</sup>Thanks to Cameron Wilson and Stephanie Solt for these examples.

- (51) *Sit and movement of subject referents*
- a. #Great Aunt Frida **sat** in her wheelchair from her house to 25th Street.
  - b. Great Aunt Mabel **sat** in her electric scooter from her house to 25th Street.
  - c. Sonny **sat** in his stroller from the subway until we reached the park.
- (52) *Stand and movement of subject referents*
- a. #Great Aunt Frida **stood** in her (non-electric) scooter from her house to ours.
  - b. Great Aunt Mabel **stood** in her Segway from her house to 25th Street.
  - c. Sonny **stood** in his stroller from the subway until we reached the park.
- (53) *Lie and movement of subject referents*
- a. #Great Aunt Frida **lay** in a recumbent bike from her house to 25th Street.
  - b. Great Aunt Mabel **lay** in the hospital bed from examining room to surgery.
  - c. Sonny **lay** in his stroller from the subway until we reached the park.

In the sentences in (51), each figure is in a moveable chair-type location: wheelchair, seated scooter, stroller; the parallel applies to (52)–(53), where the figures are in vehicles that enable either vertical or horizontal elongation. Infelicity occurs when the figure, the referent of *Great Aunt Frida* in (51-a)/(52-a)/(53-a), is causing the activity needed to propel herself to another location through space. In (51-a), Great Aunt Frida would most likely be using her arms to rotate the wheels of the chair, in (52-a) she would be propelling herself with a foot, and in (53-a) she would use both feet to pedal the bike, in order to move from her house to 25th Street. In contrast, the referent of *Great Aunt Mabel* in (51-b)/(52-b) only needs to press a button or nudge a joystick in order to move through space; the referent in (53-b) is most likely pushed by a hospital orderly along the respective path. Similar to Aunt Mabel's situation, the referent of *Sonny* in the (c) sentences can be in a sitting, standing, or lying position while somebody pushed the stroller from the subway until reaching the park. In the felicitous examples, the salient part of the meaning is that the figure is at-rest in the respective core posture, located inside a larger vehicle. In other words, a figure who is at-rest is one who is not causing a change in location through their own exertion.

The above examples and discussion tell us that literal uses of posture are incompatible with a change in location, except in special cases involving non-self-exerted movement. Intentional movement is not categorically ruled out, because it is possible for the subject to intentionally make small movements, as seen in (48)–(49), to take a train somewhere, as seen in (50), or to navigate oneself to some place by pushing a button, as seen in the example of Great Aunt Mabel in an electric scooter (51-b) or Segway (52-b). Nor does it exempt intentionality of the figure maintaining the posture, which is expected under an account arguing for sentience of the literal posture figure.

The examples above consider the idea of literal uses of posture verbs encoding figures who are at-rest. I expand on this idea from Newman (2002) and demonstrate that the literal posture uses are only felicitous when the figure is not in motion. Although smaller body parts can move, the figure itself cannot leave the ground during the reference interval.

We now apply these ideas to the non-literal uses. Although the non-literal uses of *stand* and *lie* encode an orientation of the figure along an axis, none of the posture verbs in their non-literal uses necessarily combine with sentient, volitional subjects like in the literal uses. In other words, if there is any movement of the subject, it is most likely by an external participant. Examples are in (54), with a continuation meant to target the movement.<sup>57</sup>

(54) *Non-literal uses and lack of movement*

- a. Phil's glass of water stood on the heater. #He periodically took sips from the glass during that time.
- b. *The Paris Review* sat in his seat. #Phil periodically flipped through the pages during that time.
- c. The cannoli lay at opposite ends of the towel. #Phil periodically took bites during that time.

In all three sentences of (54), the figures are all located with respect to their ground, and the continuations with Phil as the subject are all infelicitous. In the continuation of (54-a), the referent of *glass of water* is most likely moved from the ground, so that Phil can take a small drink. Similarly, in (54-b)–(54-c), *The Paris Review* and cannoli, were most likely moved from the ground, so that Phil could look at the magazine or eat the food.<sup>58</sup>

Non-literal uses, e.g., (54), are different from the literal ones, e.g., (48)–(53). One major difference is that the figure in the non-literal uses is not responsible for having moved itself to the ground, or into a specific orientation; the sentient figure in the literal uses can move themselves. Although I argue that non-movement is the core meaning component for these verbs, it can be specified further. To do this, we return to an observation from Newman (2002). He claims that there is a special use of English *sit* which is not found with the other two verbs. Here, I show that it is actually a good way to specify the non-movement component for these non-literal uses with figures usually unable to move themselves. Examples from Newman are in (55).

(55) “Non-activity”-encoding *sit*

- a. The dirty plates are sitting on the table, waiting for someone to take them away.
- b. The new car is sitting in the garage until it is registered.
- c. The books are sitting on the shelf gathering dust.
- d. The cans of beer are sitting in the cupboard, just waiting for someone to drink them.

<sup>57</sup>The adverbial *periodically* is included to reflect the repetitive movements like in the sentences in (49).

<sup>58</sup>It is also possible, albeit uncommon, for Phil to have drunk water without lifting the glass, flipped the pages without lifting the magazine, or ate the cannoli without moving it from the towel. However, this interpretation is difficult to access.



- e. The plane is just sitting on the runway in the heat, waiting for clearance to take off.

[ Newman 2002, p. 18 ]

In all of the sentences in (55), there is additional context provided to suggest that not only is the figure located with respect to the ground, but that the figure is inactive or, as I characterise it here, not in use: the plates are not being eaten upon or cleaned, the car is not being driven, the books are not being read, the beer is not being drunk, and the plane is not being flown. This meaning can also be present with the other two posture verbs in their non-literal use, shown in (56); similar phrases as in (55) are used in (56), in order to show that the compatibility is parallel for all three posture verbs.

(56) *Non-literal posture verbs and unused subjects*

- a. Phil's glass of water stood on the heater, {waiting for him to drink it|until he drank it}.
- b. The cannoli lay at opposite ends of the towel, {waiting for Phil to eat them|until he ate them}.

All three verbs are felicitous with continuations targeting the not-in-use component. In fact, this component can better explain the infelicity of the continuations from (54): even though the use of the figure by an external participant most likely involved the figure to be moved from the ground, this is not strictly always the case. Instead, the not-in-use component is an extension of the core component encoding lack of movement.<sup>59</sup> This extension is seen for the non-literal uses of all three posture verbs, but only the core component is found with the literal uses. I assume here that this dichotomy in availability of the not-in-use inference stems from the difference between being able and not being able to move oneself into or out of the core posture positions. As argued in §2.2 this ability requires sentience and the appropriate anatomy, a requirement met by subject referents of the literal uses and not met by subject referents of the non-literal uses.

Connected to the ability to assume a posture are the concepts of intentionality or volition. Such concepts are often associated with agentivity (Dowty, 1979, 1991). Considering that the definition of literal posture argued for in this thesis comprises figures, i.e., the verb's subjects, which are sentient and in control of their body parts, I claim that these subjects are agentive. In order to confirm this, a diagnostic using *deliberately* is applied in (57), followed by one with *persuade x to V* in (58). Note that, originally, this and other diagnostics were proposed by Lakoff (1966) as tests for stativity. The common assumption, however, is that the distinction is affected by the agentive/non-agentive divide (Dowty, 1979; Levin & Rappaport Hovav, 2005, a.o.).<sup>60</sup> In (57), it is expected that an inserted *deliberately* is compatible with a volitional, sentient subject.

<sup>59</sup>In §4.2, I return to this component, where it is called the 'idle' inference.

<sup>60</sup>Another common agentivity diagnostic is felicitous use with imperatives, which we saw in example (1-c) in the introduction of this chapter.

(57) *Subjects of literal uses of posture verbs are volitional and sentient*

- a. Giuseppe (**deliberately**) stood next to the heater.
- b. Salvatore (**deliberately**) sat in Giuseppe's seat.
- c. The brothers (**deliberately**) lay at opposite ends of the beach.

The felicity of *deliberately* in (57) suggests that the subjects which combine with the literal uses of each posture verb are volitional and sentient actors. For this reason, I argue that they are agentive. The second diagnostic with embedding under *persuade* is introduced in (58).

(58) *Agentivity diagnostic*

- |   |              |
|---|--------------|
| a. My mother persuaded <b>me</b> to learn French.     | AGENTIVE     |
| b. *My mother persuaded <b>me</b> to know French.     | NON-AGENTIVE |
| c. #My mother persuaded <b>the telephone</b> to ring. | NON-AGENTIVE |

[ Levin & Rappaport Hovav 2005, p. 13 ]

In (58-a) and (58-b), the boldfaced subject of the infinitival verb is a first person pronoun and being animate, it has the potential to be an agent. However, the infinitival verbs differ in their lexical semantics, i.e., in which thematic role they assign to their respective subject. In (58-a), the predicate *learn* takes an actor or agent as its subject, while the stative predicate *know* takes a theme as its subject. Because a complement of *persuade* must take an agentive predicate as its complement, (58-a) with an agent as the subject of the embedded predicate is grammatical and (58-b) is ungrammatical. This pattern continues in (58-c), where the subject is inanimate, already precluding it from agentive status; the clause in (58-c) is judged infelicitous when embedded under *persuade*.<sup>61</sup> Based on the pattern seen in (58), it is expected that the literal uses, having an agentive subject, are able to be in the complement of *persuade*. This is illustrated in (59).

(59) *Subjects of literal uses of posture verbs are volitional and sentient*

- a. Stefano persuaded **Giuseppe** to stand on the balcony.
- b. Stefano persuaded **Salvatore** to sit on the other couch.
- c. Stefano persuaded **his brothers** to lie on towels next to each other.

In (59), the subject referents of the posture verbs, the brothers Giuseppe and Salvatore, are responsible for putting themselves into each posture. As such, embedding under *persuade* is compatible with my claim for the literal uses, that the thematic role of the subject is an agent. Let us see now how this is different for the non-literal uses.

Considering the idea that an external participant is most likely responsible for moving the non-literal use subjects, the thematic role of these subjects is expected to be a theme. This is in line with Dowty (1979); Levin (1993); Levin & Hovav (1995), even if the authors call the uses by another name. The examples in (60) are variations on those

<sup>61</sup>The judgment of infelicity arises in (58-c) and not in (58-b), because a comic-book or otherwise non-real-world interpretation is only possible for the latter of the two.

from above, and all include inanimate subjects.<sup>62</sup> Like with the literal uses, the first test is with *deliberately*.

- (60) *Subjects of non-literal uses of posture verbs are not volitional*
- a. #A glass of water **deliberately** stood on the heater.
  - b. #*The Paris Review* **deliberately** sat in his seat.
  - c. #The cannoli **deliberately** lay at opposite ends of the towel.

All the sentences are infelicitous when *deliberately*, an adverbial encoding volition, is inserted. This is expected, as all the subjects are inanimate. Similarly, the non-literal uses are incompatible with being embedded under *persuade*, as is shown in (61).

- (61) *Subjects of non-literal uses of posture verbs are not agentive*
- a. #Stefano persuaded a **glass of water** to stand on the balcony railing.
  - b. #Stefano persuaded *The Paris Review* to sit on the other couch.
  - c. #Stefano persuaded **the cannoli** to lie on towels next to each other.

As with the *deliberately* diagnostic, the literal uses are all felicitous and the non-literal ones are not. For the inanimate objects it is again expected that they lack volition. The infelicity of the examples in (60)–(61) suggests that the referent of the subject lacks volition. The nature of the posture verbs also suggests that these subjects are not instruments or goals. Instead, like Dowty (1979), Levin (1993), and Levin & Hovav (1995), I argue that the subjects are themes.

So far in this subsection, we have seen one property, a ‘lack of motion’ inference, which remains stable across the literal/non-literal divide and two, a ‘not-in-use’ inference and the thematic roles which change. In the remainder of this subsection, we look at an eventive property which remains stable across the literal/non-literal divide.

It has been assumed since at least Dowty (1979, §3.8.3) that the core posture verbs are a special type of stative verb: interval statives.<sup>63</sup> The stative ingredient is based on their homogeneity, or lack of change, during an amount of time. The interval ingredient means that the eventuality can be interpreted to have boundaries, unlike typical statives. In the examples of the first part of this subsection, homogeneity of the posture eventuality has been demonstrated: the figure must not change their overall location and only minor movements are allowed, if any at all. In other words, there is some loose interpretation allowed of the posture maintenance, such as a wriggling toddler, but the posture must be maintained the whole time. Implicit in this characterisation is that these posture verbs describe a figure at rest or not in use, not moving, for a certain period of time, in contrast to other times when these figures were moving.

I employ here two diagnostics to demonstrate that while the posture verbs encode a homogeneous eventuality, i.e., a stative one, they pattern differently than would be expected

<sup>62</sup>For *sit*, it is possible to have an animate subject. The thematic role generalisation still holds for these cases. This is addressed in Chapter 4.

<sup>63</sup>See also Maienborn (1996) on a classification as Davidsonian states.

for a state. More specifically, the semantics of the posture verbs allows for a temporal interpretation, that the eventuality is bounded. The posture verbs are compared to states such as *know* and *hate*, and the two diagnostics are temporal *for*-phrases and the progressive aspect. While *for*-phrases are generally known to be able to modify unbounded eventualities, it is odd to temporally constrain the states in (62). In contrast, it is felicitous to delimit the posture positions in (63).

(62) *States which cannot be bounded*

- a. Cristina **knew** Catalan (#for 8 months).
- b. Cristina **hated** jellyfish (#for 8 months).

(63) *States which can be bounded*

- a. Cristina **stood** on the balcony (for 8 minutes).
- b. Cristina **sat** on the balcony (for 8 minutes).
- c. Cristina **lay** on the balcony (for 8 minutes).

Unlike the sentences in (62), it is possible to add a continuation to the sentences in (63), beginning with *Then she . . .* That is, it is easy to assign a temporal end to the eventualities in (63), but not in (62), because the states in (62) are interpreted to last indefinitely. In fact, it would be odd to assume that a person indefinitely maintains a specific posture. The same results are seen with the non-literal uses in (64).

(64) *States which can be bounded*

- a. A glass of water stood on the heater (for months).
- b. *The Paris Review* sat in his seat (for months).
- c. The cannoli lay on the balcony (for months).

Unlike the stative in (62) and like the states in (63), the non-literal uses of posture verbs in (64) can be bounded states. It is possible to continue each sentence of (64) with something like *before somebody moved* or *before somebody used it*.

Effects of bounded states can additionally be targeted with the progressive. Namely, the progressive aspect describes an eventuality which is currently in progress; the progressive aspect is incompatible with an unbounded homogeneous eventuality, i.e., with a typical state not containing different phases of the eventuality. Often discussions of the progressive include the phrase “temporal framing”, as the progressive can relate one eventuality to another one, by containing or framing it. In (65), a non-stative verb and the two different types of stative verbs appear in the progressive; a preceding clause is included to show what the progressive can frame.

(65) *The incompatibility of the progressive with states*

- a. When her mom called, Cristina was swimming laps. NON-STATE
- b. #When her mom called, Cristina was {knowing|loving} Catalan. STATE
- c. When her mom called, Cristina was {standing|sitting|lying} outside. STATE

In all three sentences of (65), there are two eventualities: a calling one and the target one. In (65-a), the target eventuality is a swimming one, and it frames the calling one: it is understood that the swimming eventuality lasted longer than the calling one. Similarly, in (65-c), the maintenance of a particular posture position is interpreted to have lasted longer than the calling eventuality. For both of these felicitous sentences, it is understood that the swimming or posture eventualities are long-lasting, but that they have an eventual endpoint. In contrast, it is infelicitous to use a stative like *know* or *love* with the progressive; it is odd to compare the length of a knowing or loving eventuality with a calling one, because it is typically understood that the former does not have an end determined by the predicate itself. In (66), the same pattern can be seen with all three posture verbs in their non-literal uses.

(66) When her mom called, *The Times* was {standing|sitting|lying} on the shelf. STATE

As expected, the progressive is compatible with the non-literal posture verbs. However, this is not the whole story: as pointed out by Dowty, a sentence with an immovable subject is marked when combined with the progressive.<sup>64</sup> His examples are shown in (67), with his marking of ‘??’.

- (67) a. The new building {stands|??is standing} at the corner of First and Main.  
 b. John’s house{sits|??is sitting} at the top of the hill.  
 c. New Orleans {lies|??is lying} at the mouth of the Mississippi River.

[Dowty 1979: 174]

The subjects of (67) are a building, a house, and a city. The simple present is well-formed, but the progressive is not. Dowty (1979) supposes that this is due to the immovability of these subjects, which clashes with the interval stativity of the posture verbs. As described above, the compatible subject of an interval stative must “[denote] a moveable object, or to be more exact, an object that has recently moved, might be expected to move in the near future, or might possibly have moved in a slightly different situation” (Dowty, 1979, p. 175). A building, a house or a city, the subject referents in (67), are not entities which can be moved from their grounds easily. For this reason, it is considered to be difficult to combine such subject referents with the posture verbs. In §4.1.4, I return to this issue, demonstrating that certain contexts can override the incompatibility of immovable with interval stative *sit*.

To sum up, this subsection looked at and compared specific properties of posture verbs across both literal and non-literal uses. I showed that there is a core meaning component of non-movement for both literal and non-literal uses. This core meaning component can be extended in the non-literal use into an inference of ‘not-in-use’. In addition, the thematic roles are different across the literal/non-literal divide, where agents combine

<sup>64</sup>That is, unless the context is a narrative-type one. As I am interested in real-life scenes, I leave these contexts aside.

with the literal uses and themes with the non-literal uses. Finally, across the literal/non-literal divide, the aspectual component of interval stativity is preserved in the non-literal uses. This component is preserved to the point that some subjects contradicting the temporary nature of the interval are incompatible with the non-literal use. The properties identified in this subsection are compatible with previous literature on other phenomena: as remarked in the beginning of this subsection, it was expected that aspectual category remains stable across the literal/non-literal divide (McNally & Spalek, 2022), while the argument structure was expected to change (Searle, 1980; Spalek, 2014, 2015). The core component of meaning is stable across the divide, because the posture verbs' diachronic trajectories have not yet advanced to the point that some ambiguous items like *bank* have (s. §2.1.2). The next section summarises the findings and arguments of this chapter.

## 2.4 Summary and look ahead

The final section of this chapter is structured by the research questions asked in the introduction. These questions are repeated in (68).

### (68) *Research questions*

- a. What is the nature of the literal/non-literal divide, and how is it manifested in English posture verbs?
- b. How can literal uses of posture verbs be defined?
- c. How can non-literal uses of posture verbs be defined?
- d. How can the non-literal uses be compared to their literal counterparts?

The question in (68-a) concerns the literal/non-literal divide as it applies to the posture verbs. A clear division of literal and non-literal meaning was introduced in §2.1.1 for posture verbs, and further developed throughout the chapter: those sentences where a subject is described as being in a posture position for the reference interval are literal uses, and these uses require a sentient subject referent who has the appropriate anatomy to assume the relevant posture. Other transparent and productive uses are non-literal ones, although in English this side of the divide is not uniform. For one, *stand* and *lie* encode orientation of the subject in their non-literal use, while *sit* does not. Secondly, *stand* or *lie* sentences without a postverbal location or adjective are infelicitous, whereas parallel *sit* sentences are ungrammatical. I argue in this thesis that this difference is due to varying stages of diachronic change: *stand* and *lie* may currently be reanalysed by some language users, while *sit* has already been reanalysed, both structurally and semantically (s. Chapters 6–7).

In §2.1.2, the question in (68-a) was further addressed. Namely, the type of indeterminate meaning of the posture verbs was identified as homonymy, also known as ambiguity. Two arguments motivate this classification: the literal and non-literal meanings are distinct enough to result in zeugma when coordinated; and the synchronic picture of *sit*, the

most diachronically advanced of the verbs, demonstrates that there are clear structural differences between the literal and non-literal meanings. That is, I argue in this thesis that there are two separate lexical entries for the literal and the non-literal meaning.

The question in (68-b) concerns the literal uses of the posture verbs. Building on previous literature, outlined in §2.2.1, I proposed my own definition of these uses. The argument structure input is a sentient, volitional subject capable of assuming and maintaining the posture. The limits of eligible figures were outlined in §2.2.2–2.2.3. For one, there is the already-mentioned pre-condition of sentience and volition. Secondly, they must have the proper anatomy to support the body in the posture: for *stand* it is feet, for *sit* it is a butt, and for *lie* it is a torso. The combination of sentience and anatomy accounts for the inability of, e.g., dead bodies and other inanimate figures, from having posture predicated of them. In addition, the definition proposed in §2.2.2 can easily be extended to non-human sentient figures in §2.2.3, as the points of support are parallel. An important insight from the discussion of (in-)eligible animals is that any literal use of a posture verb requires the animal to be able to transition into/out of more than one of the core postures. That is, even if some animals have legs but cannot sit, it is also infelicitous to describe them with literal *stand* or *lie*.

The question in (68-c) concerns the non-literal uses of the posture verbs. To answer it, I looked to what the previous literature has said about the non-literal uses, even if there was not an explicit mention of the divide. Overall, other authors have mostly discussed posture verbs with respect to spatial relations only. In §2.3.1, the typological tradition of spatial relations and posture verbs was discussed, and in §2.3.2 the formal one was discussed. The takeaway points from these two sections are that non-literal uses of posture verbs can encode location of their subject in an unmarked way, contra the typology proposed by Levinson & Wilkins (2006a) and Ameka & Levinson (2007), and that the non-literal uses of *sit* always require postverbal material, while non-literal uses of *stand* and *lie* can omit the location when the orientation is emphasised; this characterisation builds on the empirical generalisation proposed by Maienborn (1990, 1991) for German. In addition, as the data from the corpus studies in Chapter 3 demonstrate, the postverbal location can also be substituted by a postverbal adjective in the non-literal uses. This provides empirical support for my claim in Chapter 5 that *sit*, the most diachronically advanced of the verbs, is a copular verb in its non-literal use.

Finally, the question in (68-d) compares the literal and non-literal uses of the posture verbs, in particular with respect to their core component and eventive properties. The core component centres on non-movement of the subject, although it can be extended in the non-literal uses to an inference of non-use of the subject. This component is addressed again in Chapter 4, where it is confirmed for all subject types of *sit*, and in Chapter 5, where the type of meaning is diagnosed. In terms of the eventive properties, one is shared across the literal/non-literal divide and one is not. The shared one is aspectual, as both verbs are interval statives. The variable one is the thematic role of the subject, which I assume here is an agent for the literal use and a theme for the non-literal use. This difference in thematic role across the literal/non-literal divide additionally

supports my assumption that, despite differences within the class, the non-literal uses of *stand* and *lie* share similarities with *sit*.

While posture verbs generally have not received much attention in the formal literature, the non-literal uses have been especially neglected. In the next chapter, I present two synchronic corpus studies wherein naturally-occurring uses of *sit* and the other posture verbs are analysed. In the subsequent chapters of this thesis, I focus on the verb with the least restrictions, i.e., *sit*, and investigate its lexical semantics in more detail.



## Chapter 3

# Non-literal posture, empirically

In Chapter 2, the literal and non-literal uses of English posture verbs were explored. More specifically, in §2.1, the distinction between the literal and non-literal uses, as well as the nature of that particular ambiguity, was delimited. Then, a definition of literal posture was proposed in §2.2, followed by a review of previous literature on the non-literal uses in §2.3, and a comparison of each use's eventive properties in §2.3.3. There are useful insights from the previous literature, but non-literal uses of English posture verbs remain an understudied phenomenon, and more data are needed to better understand their behaviour. The present chapter contains an analysis of naturally-occurring data from corpus studies, and is thereby an attempt to fill this gap. In the following, I present a summary of the arguments of Chapter 2.

Data from two corpus studies are analysed in this chapter: The first, called here Corpus Study I is presented in §3.1. It focuses on *sit* and was originally undertaken for Fraser (2016). The data are unaltered, but the analysis presented here is a posthoc one, with a different focus. The second corpus study, called Corpus Study II, is presented in §3.2. It investigates all three verbs, *sit/stand/lie*, and it is a follow-up to Corpus Study I. In the following, I present the object of study in more detail, by describing what has been claimed about the non-literal uses and what information is sought in these studies.

This thesis is interested in the literal and non-literal uses of the core posture verbs, *sit*, *stand*, and *lie*. These two uses can be distinguished by the input, i.e., the argument structure, of the verb, and its output, i.e., the interpretation, as discussed in §2.1.1. The referent of the subject of the literal use can be a living entity, so long as it is sentient and is able to assume the relevant posture position. The ability to assume the posture is delimited by anatomy, as was shown in §2.2.2–2.2.3. For example, a dolphin is animate and can be sentient, but this animal has no legs, nor a butt, so it is impossible for this animal to assume a sitting position, much less be predicated of that posture. With the correct input, the literal interpretation of the posture verb describes the referent as maintaining the respective posture for the reference interval. Without the correct input, a non-literal interpretation is possible.

A crucial difference between the literal and non-literal uses is that the former requires no argument structure beyond the subject DP and the posture verb, and this is applicable to all three verbs. For the latter, the non-literal use, *sit* always requires an additional

postverbal item while *stand* and *lie* can omit it in those instances where the orientation is foregrounded.<sup>1</sup> This is illustrated in (1).

- (1) *A postverbal predicate is obligatory for non-literal uses of posture verbs*
- |    |   |             |
|----|---|-------------|
| a. | Sally is {sitting standing lying} (on the floor).       | LITERAL     |
| b. | <i>Station 11</i> is {standing lying} # (on the floor). | NON-LITERAL |
| c. | <i>Station 11</i> is sitting *(on the floor).           | NON-LITERAL |

As is shown in (1-a), the literal use of the posture verbs is well-formed both with and without a postverbal location. In (1-b), in contrast, the non-literal uses of *stand* and *lie* is infelicitous, and in (1-c) with *sit* it is ungrammatical without a postverbal location. Although there is this difference in infelicity vs. ungrammaticality of the non-literal uses, the corpus study results do not completely mirror this. That being said, a lack of corroboration does not detract from the infelicity data: the dataset of Corpus Study II is small and omitted locations with *stand/lie* require a specific, i.e., uncommon, context in order to appear.

The literature reviewed in §2.3 gives the impression that the non-literal use of the posture verbs always concerns spatial relations, which leads to the assumption that this postverbal item is only ever a location. The results of the corpus studies presented in this chapter demonstrate that the locative association is a tendency rather than a rule. In fact, postverbal adjectives can appear instead of the location, as is illustrated in (2).

- (2) *Station 11* is {sitting|standing|lying} \*(open).

In the sentences in (2), the postverbal item is an adjective, *open*, and there is no postverbal location. Without this adjective, the posture verb sentence is ungrammatical. In the corpus studies, not only is it investigated whether a postverbal component is always needed, but also how often a postverbal adjective appears instead of a location and whether there are any other postverbal possibilities.

In addition to the postverbal component, the corpus studies presented in this chapter investigate the nature of the subject. The presentation of Corpus Study I in this chapter is a posthoc one, overshadowing the original exploratory spirit of Fraser (2016). That is, the original research goal asked what type of subjects can appear with the non-literal uses, and this was asked as an open question. At that time I annotated the referent of each noun in a fine-grained way by following the CORPUS PATTERN ANALYSIS (CPA) methodology (Hanks,

<sup>1</sup>Note that the expression “postverbal component” refers to the canonical surface structure of English, a language with a fairly rigid word order. Deviations from this tendency include locative inversion, like in (i).

- (i) On the table sat *Station 11*.

In the studies presented in the current chapter, however, such variations are not taken into account, because the research goals concentrate on synchronic description of the phenomena, and do not include a dynamic analysis of diachronic change. That is, I analysed the surface subject, such as *Station 11* in (i), as the underlying subject and a location such as *on the table* in (i), as the postverbal component (s.a. my structural assumptions in §5.2). For (i), this means that *Station 11* would have been marked as the subject and *on the table* as a postverbal location.

2004; Hanks & Pustejovsky, 2005; Hanks, 2013). This methodology is based on the ideas behind the GENERATIVE LEXICON of Pustejovsky (1995), which assumes a rich lexical-conceptual structure, i.e., that the sense, not just the type, of argument influences the final interpretation of a verb (s.a. §2.1.2). Further details on the categorisation procedure are found in §3.1.2. For the current analysis, I organised the original annotations into the following broader categories. I outline these in the following paragraphs.

In the examples we have seen so far, both my own constructed ones and those from the literature, the subjects have been mostly artefacts. In the discussion of the Basic Locative Construction (BLC) in §2.3.1 and of locative verbs omitting the location in §2.3.2, I highlighted the need to distinguish between moveable and immovable entities when analysing the data. This distinction is tied to the core meaning of the posture verbs, identified in §2.3.3: the subject's referent is described to not be in motion during the reference interval. When an entity unable to move from its location is combined with a predicate re-stating this immobility, it is possible that this combination patterns differently than when the subject's referent is moveable. Therefore, for the corpus studies, I was interested in how often immovable entities appear as subjects and whether the postverbal component varied with these subject types.

Besides artefacts and immovable entities, I identified abstract and natural entities. For these corpus studies, I investigated whether non-moveable entities such as buildings, natural entities such as clouds, or abstract entities such as feelings appear in addition to the artefact subjects seen in the hitherto examples. Corpus Study I looks at *sit* only, and it is found that any of these are possible. Corpus Study II looks at all three verbs, and differences in distribution are seen.

A final component of the empirical investigation of this chapter concerns the differences in non-literal uses of the three verbs. We saw in the previous chapter that not all posture verbs pattern the same in the non-literal uses. More specifically, *stand* and *lie* seem to encode subject orientation, while *sit* does not. An example with a book referent of the subject is in (3), with a continuation contradicting the orientation.

(3) *Subject orientation differences amongst the posture verbs*

- a. *Station 11* was sitting on the floor, but it was not in a sitting position.
- b. *Station 11* was standing on the floor, #but it was not in an upright position.
- c. *Station 11* was lying on the floor, #but it was not in a horizontal position.

As can be seen in (3), not all three of the core posture verbs equally encode orientation of the subject. The *sit* sentence in (3-a) does not describe the book referent as being in a sitting position—nor is it physically possible to bend most books into a perpendicular line resembling a human with a bent leg-torso angle (s. §2.2.2). As such, the continuation is felicitous. In contrast, the *stand* and *lie* sentences in (3-b)–(3-c) describe the book referent as being vertical and horizontal, respectively, and the continuations are infelicitous. In Corpus Study II, which looks at all three posture verbs, it is a secondary research question whether the non-literal uses of *stand* and *lie* always encode orientation or whether there

are some instances more like *sit*, without a description of orientation. This question is addressed in the discussion in §3.3, where it is additionally considered whether any instances without postverbal material are consistent with the data seen in §2.3.2.

The chapter is divided as follows. In §3.1, I present data from a corpus study first reported in Fraser (2016, 2018). This study, which I call here Corpus Study I, investigates *sit* only; for this thesis I reframe the research goal, testing the postverbal location claim described above, in addition to the distribution of subject categories and whether there is any association between postverbal and subject category. The second study in §3.2, called Corpus Study II, is a follow-up to Corpus Study I: it has parallel research questions, although it broadens its scope to include the other two posture verbs. In §3.3, the results of both studies are compared to one another, and are discussed with respect to the theoretical claims presented above.

### 3.1 Corpus Study I

Fraser (2016, 2018) reported a qualitative corpus study on *sit*, called here “Corpus Study I”. The research in that work had a different focus than in the present work, although the data are still relevant. In particular, the original study was interested in exploring possibilities of the non-literal use of *sit* with respect to the linguistic context, and looked at additional factors in the context, which are explained below. The scope in this thesis is broader, investigating the uses across the literal/non-literal divide; the present chapter serves to provide missing empirical information about the non-literal uses.

The differences in analysis between Fraser (2016, 2018) and the present thesis are addressed in more detail in the preliminaries in §3.1.1. The description of the methodology follows in §3.1.2, then the results are presented in §3.1.3, and finally a discussion of those results in §3.1.4.

#### 3.1.1 Preliminaries

In this subsection, the original motivation for carrying out Corpus Study I is described. In addition, I discuss which variables have been omitted from the original study’s analysis and submit the research questions for Corpus Study I.

This study was inspired by the empirical work in Spalek (2014, 2015), who, as was mentioned in §2.1, investigated the combinatorial semantics of change-of-state verbs in Spanish. Examples with *romper* are in (4), where it can be seen that the verb often translates into English as ‘break’; the target verb is boldfaced in each example.<sup>2</sup>

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<sup>2</sup>The sentences in (4-c)–(4-d) are marked in the source text as naturally-occurring examples found in an El País Corpus, with all issues dating from 1976 to 2007; it was hosted at the time at the Institut Universitari de Lingüística Aplicada (IULA) at the Universitat Pompeu Fabra in Barcelona.

- (4) *Different senses of romper*
- a. Juan **rompió** la ventana.  
Juan broke the window  
'Juan **broke** the window.'
  - b. Juan **rompió** la camiseta.  
Juan broke the t-shirt  
'Juan **tore** the t-shirt.'
  - c. Fraga **rompió** ayer su mutismo político.  
Fraga broke yesterday his silence political  
'Fraga **broke** his political silence yesterday.'
  - d. En el último trimestre se produjo un estancamiento en la venta de  
in the last trimester REFL produced a stagnation in the selling of  
viviendas que **rompió** la evolución positiva que se había vivido en los  
livings that broke the evolution positive that REFL had lived in the  
primeros meses.  
first months  
'In the last trimester the sales of housing stagnated, which **interrupted** the  
positive evolution experienced in the first months.'

[ SPANISH; Spalek 2015, p. 39 ]

Spalek (2014, 2015) argues that the variety in theme, i.e., in its semantic content, is reflected in the variety in interpretation. In (4-a)–(4-b), the theme is a concrete artefact, and the interpretation of the VP is that this artefact has been destroyed. In contrast, the theme arguments of (4-c)–(4-d) are eventive: a state in the former and a process in the latter. For both sentences, the VP's interpretation is that the eventuality ended. As can be seen in these examples, the content of the theme can affect the resulting interpretation. In order to understand the non-literal uses of *sit*, I undertook a study based on Spalek's, with a main goal being to examine the semantic content of the items combining with non-literal *sit*.<sup>3</sup> Originally, the research questions of Corpus Study I were open ones, hypothesis-generating instead of hypothesis-testing. This is because Corpus Study I was intended as an exploratory study, and I did not want to unintentionally exclude information about non-literal *sit*. With respect to the combinatory possibilities, the type of subject and of the postverbal component were examined. Prior to undertaking Corpus Study I, I had generated some constructed examples and confirmed them with other native speakers. These mostly included artefact subjects, like the book in (1)–(3), but also aquatic animals like those in (5).

- (5) *Animate subjects with non-literal sit*
- a. **A dolphin** was sitting in the cove.
  - b. **Two whales** sat underneath our boat the whole time we were anchored.

<sup>3</sup>At the time of the original investigation, I did not yet analyse non-literal *sit* with different syntax, and therefore a different lexicon entry, than literal *sit*. In contrast, the verbs in Spalek (2014, 2015) are polysemous and analysed as having a single lexicon entry. Nonetheless, the systematic nature of Spalek's study examining non-literal meaning is applicable, regardless of the final analysis.

The two types of aquatic animals in (5) lack the appropriate anatomy to be in a sitting position. That is, dolphins and whales neither have legs to bend at the torso nor a butt to support their body on a horizontal surface. In addition, these sentences describe the animals in an aquatic location, and while it might be possible to argue they are located on the bottom of the sea, that is an unlikely interpretation. Instead, it seems that they are stationary in the water at a particular spot. These sort of subjects are rather uncommon and do not appear in the corpus study.<sup>4</sup> I make note of them now, however, because these examples contradict an impression given by the cognitive and typological literature on posture verbs (s. §2.2–2.3): that animate referents, especially humans, are the subjects of literal posture uses and inanimate ones are the subjects of non-literal posture uses. In other words, such examples contribute evidence that non-literal *sit* is an understudied phenomenon, especially with respect to its combinatory possibilities.<sup>5</sup>

For the postverbal component, I had only expected to see a location, without a further prediction about what else could be found. This expectation was based on previous literature, in particular on the analysis in Maienborn (1990, 1991), as described in §2.3.2. Maienborn argues that locations are needed with posture verbs when the posture position cannot be highlighted or reconstructed from the context. So for sentences like those in (5), the omission of a location results in ungrammaticality because the referents are not actually in a sitting position. This is shown in (6).

- (6) *Omitting the location highlights posture*
- |   |             |
|---|-------------|
| a. A dog was sitting (on the beach).      | LITERAL     |
| b. A dolphin was sitting *(on the beach). | NON-LITERAL |

When the referent is a human or some animal with the correct anatomy to be in a sitting position, like the dog in (6-a), it is possible to omit the location. This is a literal use of *sit*. In contrast, when the referent is an animal, like a dolphin, without the appropriate anatomy or an inanimate object, it is not possible to omit the location, like in (6-b). This is a non-literal use, where a sitting position is not part of the meaning; in (6-b) the interpretation is rather that the dolphin is located on the beach in a horizontal position, most likely dead or unwell, due to the beach being an unnatural resting location for that animal. The same postverbal omission pattern was seen above in (6) for a human in the literal use and a book referent in the non-literal use.

My expectation for the original corpus study, first reported in Fraser (2016), was that the postverbal item would always be a location. Not expecting, e.g., adjectives, had consequences for the methodology: I annotated a sentence as containing a location even if other postverbal material appeared; I only annotated a sentence as containing, e.g., an adjective if there was no location and instead an adjective following the verb. In other words, the methodological rule was that if a location appeared, even if not immediately postverbally, it was categorised a location sentence.

<sup>4</sup>These and other examples are discussed in Chapter 4, where I propose a typology of subjects for *sit*.

<sup>5</sup>At the time, I did not make any other specific predications with respect to possible subject referent types.

Two additional topics had been explored in the original study: an evaluative inference and progressive aspect.<sup>6</sup> The evaluative inference contributes meaning that the state of the subject referent is unwanted, as is shown in (7).

- (7) *An evaluative inference with non-literal sit*
- a. The dishes are sitting in the sink.  
     ↪ ‘The dishes being located in the sink is unwanted.’
  - b. The library book was sitting under the bed for weeks.  
     ↪ ‘The library book being located under the bed is unwanted.’

In both sentences in (7), the referent of the subject is described as being located somewhere. The inference in (7-a) evaluates the state of some dishes being in the sink; the speaker might wish they were in, e.g., the dishwasher or the cabinet. Likewise, the inference in (7-b) evaluates the state of a library book under a bed for a long time; the speaker might have wished that it was already returned, not hidden away. Originally, as reported in Fraser (2016, 2018), I had thought that this inference appeared alongside the progressive aspect, in particular when the sentence describes a contingent state; the inference contributes meaning that the speaker expects that the current state will change soon after the reference interval. This analysis was based on observations such as in Comrie (1976) that the English progressive is incompatible with state verbs—except when it describes a contingent state. An example is in (8), where the contingent state is associated with the speaker’s state of inebriation.

- (8) I only had six whiskies and already **I am seeing** pink elephants.

[ Comrie 1976, p. 37 ]

Although I do not reject that there is such an additional evaluative inference in non-literal uses of *sit*, my investigation of the data since Fraser (2016, 2018) has revealed little regularity in the appearance of this inference. In addition, it is quite subtle, even suggestive of being idiosyncratic: there are native speakers who agree that there is a non-cancellable inference, but other native speakers do not see any inference.

Returning to Corpus Study I as it is reported in this thesis, the research questions in the posthoc analysis are listed in (9). The research questions comprise two concerning the frequency distribution of type of subject and of the postverbal component and another one concerning the association between types of components.<sup>7</sup>

<sup>6</sup>While the latter is quantifiable, the former was an additional component of the qualitative, manual, analysis of the data in the original study.

<sup>7</sup>Note that I deliberately use “association”, not, e.g., “correlation”, because the latter is a measure of the former: correlation is a measure of linear association. The type of relationship between two variables is not necessarily a correlation, and I therefore use “association” as a cover term.

(9) *Corpus Study I: Research questions*

Q1 What is the most frequent type of subject?

Q2 What is the most frequent type of postverbal component?

Q3 Is there an association between the types of subject and postverbal component?

The first two questions concern the two components, which are the two categorical variables of this study: subject and postverbal component. In the next subsection, the different levels of the variables are enumerated and motivated. For both, the null hypothesis is that there is no most frequent type, i.e., that levels of both types are equally distributed, and the alternative hypothesis for both is that the types are not identical in distribution. My prediction for the most frequent subject type, in Q1 was artefacts and for postverbal component in Q2, locations.<sup>8</sup> For Q3, the null hypothesis is that there is no association between the variables, i.e., they are independent of one another, and the alternative hypothesis is that there is an association between the postverbal component and the subject. My prediction was that an association would be between the most frequent types, artefact subject referents and postverbal locations. To test this, I apply measures of association to interpret the results, as reported in §3.1.3.

**3.1.2 Methodology**

In this subsection, the procedure of the study is described, including the data source and annotation strategies. The data for this study come from the Corpus of Contemporary American English (COCA; Davies 2008–), news and magazine genres. The study was completed in May 2016. The reason for restricting the genres is twofold: so that the amount of data was manageable and to ensure the data represented a “generally accepted contemporary standard” (Spalek 2014, p. 48, s.a. Hanks 2004). The complete details for the methodology can be found in Fraser (2016), but I present an overview here.

The search query included simple past and progressive forms of the verb *sit*.<sup>9</sup> The specific queries can be seen in (10), where NN\* in the first bracket represents the command for noun phrase and the third bracket contains items to be omitted from the result.

(10) *Search query*

a. {NN\*} {[be] sitting} {-around|down|up}

b. {NN\*} {sat} {-around|down|up}

[ Fraser 2016, p. 41 ]

<sup>8</sup>Remember that the postverbal components are judged by whether there is a location at all, not by what immediately follows the verb. In this way, there may be, e.g., an adjective or adverbial, in addition to the location.

<sup>9</sup>In the original study, I additionally included non-progressive *-ing*. However, here I limit the analysis to the progressive forms, which are clear verbal uses. This means that instances of *sitting* like in the sentence in (i), were omitted from this analysis.

(i) **Sitting on the balcony** is only pleasant on Sunday mornings when there is no traffic.



The bracketed items are specified in this way, in order to exclude as many irrelevant hits as possible. Considering that there is no way to automatically exclude literal uses in this corpus, these bracketed items also targeted literal uses so that more non-literal ones appeared. The first item, *around*, is known to be a lexicalised phrase (Newman & Rice, 2004), excluding any combinations on the grounds of compositionality, as argued for in §2.1. Examples are in (11), with *around* boldfaced.

- (11) *Irrelevant uses with around*
- a. Sally {was sitting|sat} **around** all weekend.
  - b. My copy of *Station 11* {was sitting|sat} **around**, but I didn't crack it open until the HBO show aired.

In both sentences of (11), the VP including *around* describes the subject as being idle or unused. In (11-a), the referent of *Sally* is not entailed to be in a sitting position the entire weekend, even though the input of a sentient human subject often gives the literal interpretation of *sit*. Similarly, in (11-b), the referent of the subject is not described as being located somewhere, nor is it ascribed a property as would be expected for the non-literal use. Instead, both referents are inferred to be inactive for a certain interval. These uses are not transparently compositional and were therefore excluded. In addition to *around*, the particles *up* and *down* were excluded because they are often associated with animate subjects assuming and/or maintaining sitting positions, which is not only non-literal but also dynamic. Examples with a human subject are in (12).

- (12) *Irrelevant uses with up|down*
- a. Sally was sitting {**down|up**} when her mom entered the room.
  - b. Sally sat {**down|up**} when her mom entered the room.

In both sentences of (12), the referent of the subject is in a sitting position. These are irrelevant uses of *sit* and were therefore omitted from the search query.

From the output of the search queries, 100 sentences were randomly extracted from each category, 200 in total. The idea was that, because this is an in-depth qualitative study, the number of sentences must be manageable. The extraction involved first finding the target combination, then copying the target sentence and its surrounding context, both the extended context (multiple sentences) and the “key words in context” (KWIC).<sup>10</sup> Finally, the extracted sentences were transferred into Microsoft Excel spreadsheets.

Following the extraction phase is a filtering and then an annotation phase. During the filtering phase, idioms such as *sitting on cash* or *sitting on their hands* were omitted, as well as misfires such as *Sat.*, representing ‘Saturday Night’ or *SAT exam*, a common standardised test in the United States. To my knowledge, there is no definite list of

<sup>10</sup>The exact number of words included in KWIC is not clear, either via manually counting within outputs of my searches (anywhere from 10-30) or looking on their website. The most precise definition I could find was that “users see just a handful of words to the left and the right of the word(s) searched for”, which was in the context of a discussion on whether the corpora breach copyright of the texts, as outlined by the US Fair Use Law. Discussion is at <https://www.english-corpora.org/copyright.asp>, accessed 10 June 2020.

idiomatic uses of *sit*, and although some dictionaries provide translations, the lists do not overlap. As the methodology requires a close reading of all sentences, I determined on a case-by-case basis whether a sentence was idiomatic or eligible. If not, I considered them codified idioms and omitted them. These idiomatic phrases appeared multiple times in the dataset, further confirming the label of idiom. Other examples of *sit* idioms are listed in (13).

(13) *Idiomatic phrases with SIT: non-exhaustive list of examples*

- a. sit tight: ‘to maintain one’s position without change; to remain quiet in or as if in hiding’
- b. sit on [one’s] hands: ‘to withhold applause; fail to show approval or enthusiasm; to fail to take expected or appropriate action’

[ From Merriam Webster<sup>11</sup> ]

Each of the sentences in (13) contain non-compositional uses of *sit*. That is, the postverbal item does not predicate a property of the subject referent. In (13-a), *sit tight* does not mean that the subject is in a sitting position in a cramped way or that the subject is located somewhere in a cramped way. Rather, *sit tight* is associated with an unchanging opinion or with staying somewhere quietly. In (13-b), *sit on one’s hands* does not necessarily mean that the referent is in a sitting position on their hands or that the referent is somehow located on top of their hands. Instead, it means that the subject did not do what they were expected to do. After filtering out the irrelevant uses, 120 hits remained.

As noted above, the original nature of this study was exploratory, and the annotations open-ended. Originally, I had categorised the subjects in a detailed way, using the CPA methodology mentioned in the introduction to this chapter. This methodology is based on theories like the generative lexicon Pustejovsky (1995), where it is argued that there is a rich lexical-conceptual structure to lexical items, and that an indeterminate item’s meaning depends on the structure of the input. We saw this in §2.1, as well as in the previous subsection with the *romper* ‘break’ examples from Spalek (2014, 2015) in (4). CPA differs from other lexicographic methodologies such as FrameNet (Fillmore & Atkins, 1992; Atkins et al., 2003; Fillmore et al., 2003, a.o.), because the former is lexicocentric, while the latter is not. That is, the procedure with FrameNet involves analysing chunks, or frames, of lexical items, whereas CPA analyses the meaning of each item individually. My procedure deviated from the original CPA, in that I concentrated on one particular use of *sit*, not all possible uses, and I manually annotated a small set of data. Nonetheless, the underlying idea, that the local context of an item needs to be systematically documented, was retained in my procedure. There was also an important resource built from CPA researchers, the Pattern Dictionary of English Verbs, which is a non-exhaustive inventory of the compositional uses of English verbs. Although there was no entry for any of the posture verbs at the time, the website included an ontology of nouns, upon which

<sup>11</sup><https://www.merriam-webster.com>; last accessed 18 August 2021.

I relied to categorise the subjects and postverbal component.<sup>12</sup> For example a car was annotated as a VEHICLE, a book as a DOCUMENT, and a computer as a DEVICE. While such detail was useful for the purposes of the original study, I report here broader categories, wherein VEHICLE, BOOK, and DEVICE would all be labelled as (wo-)man-made ARTEFACT.<sup>13</sup> For the present analysis, I delineated four types of subject referents, which correspond to four levels of the variable SUBJECT: the aforementioned ARTEFACT, its natural counterpart NATURAL, objects which are IMMOVEABLE, and those which are ABSTRACT.<sup>14</sup> These types are summarised in Table 3.1, and the sentences in (14)–(17), from the corpus study itself exemplify these levels. Note that each label was applied with respect to the referent of the subject, regardless of the morphological form’s canonical referent.

TABLE 3.1: Corpus Study I: Four levels of SUBJECT

Level	Features	Example
<b>Artefact</b>	[ +moveable, +synthetic, +concrete ]	(14)
<b>Natural</b>	[ +moveable, –synthetic, +concrete ]	(15)
<b>Immoveable</b>	[ –moveable, ±synthetic, +concrete ]	(16)
<b>Abstract</b>	[ –moveable, –synthetic, –concrete ]	(17)

As can be seen in Table 3.1, the entities are distinguished from one another (i) by whether or not they are easily moved, (ii) by whether or not they occur spontaneously in nature, and (iii) by whether or not they are abstract entities. The first distinction is influenced by the definition by Talmy (1972) and subsequent works for figure with respect to a ground the figure entity moves or is located with respect to the ground entity (s.a. §2.3.1, where moveability of the figure is a defining feature of the Basic Locative Construction). The second distinction was based on the initial observation that while artefacts are the easiest to combine with *sit* when constructing examples, sometimes it is possible to use a natural entity, such as clouds. In order to see the distribution of natural entities, this was chosen as a category. Note that immoveability of the entity overrides whether or not it is naturally occurring. Finally, the third distinction concerns abstract versus concrete entities. We saw already the *romper* examples from Spalek (2014, 2015) in (4) where concrete themes give different interpretational outputs than abstract ones. It is possible that abstract referents of non-literal *sit* pattern differently than the concrete ones. Now we look at examples from the dataset, beginning with the first two moveable types, ARTEFACT and NATURAL.

<sup>12</sup>The original location of this dictionary was at [www.pdev.org.uk](http://www.pdev.org.uk). This page was last accessed in May 2016. Since then, that link no longer functions as is; it requires an appended ‘/#’ to work. In addition, it no longer has the same interface, and the ontology has disappeared. That being said, the posture verbs still do not have an entry in the dictionary.

<sup>13</sup>The immoveable category is my own label. It includes entities which were originally labelled as BUILDING or *area*.

<sup>14</sup>Henceforth, I use small caps for variables and their levels when reporting the empirical studies.

(14) *Artefact subject*

- a. When I saw it, a couple of months after Fossett's disappearance, **the car** was sitting in a Reno warehouse, looking dangerous and leaking fuel.
- b. His blond mullet flowed down the shoulders of his flame-embroidered leather jacket. **His sunglasses** sat on top of his pink forehead.

(15) *Natural subject*

- a. The evening we were due to fly up the mountain, **a big cloud** was sitting on top of it.
- b. My first target was Jupiter. [...] Peering through the 26mm eyepiece, **the planet** sat just slightly west of center.

[COCA]

In the sentences in both (14) and (15), the subjects are able to be moved from their respective locations, either by an external agent or by natural forces. What differentiates the entities is how they come into existence: artefacts like cars and sunglasses are (wo)man-made (14) and natural entities like clouds and planets are naturally made (15). Note that even though a planet is massive, it is moving through space. This is in contrast to the entities in (16), which are large but relatively immovable.

(16) *Immoveable subject*

- a. **Untouched wilderness** is sitting quietly under the stars.
- b. They were not aware **their property** sat on the San Andreas Fault until the shaking stopped, and they walked outside to find a fissure five feet wide and 10 deep snaking up to the house.

[COCA]

In both sentences of (16), the entities are difficult to (re-)move from their location. The expanse of non-urban area in (16-a) is only removable by razing the ground. The entity in (16-b) is the entire property, including a house; this is also not easy to move, even if it is located on a major fault line. In the last set of examples, we look at the ABSTRACT label.

(17) *Abstract subject*

- a. **The natural carcinogens** were sitting there quietly in the literature on carcinogenesis, along with the synthetics.
- b. In 1992, for example, **the rate** sat at 5.55 mills; 10 years later, it was 5.191 mills.

[COCA]

In (17-a), the entity is a group of substances known to cause cancer. Even if the referent of *carcinogen* can be a concrete entity such as a cigarette, I labelled it as "abstract" because its referent is abstract in (17-a). The carcinogens are described as being located in "the

literature”, a non-concrete location. The subject in (17-b), *the rate* almost always has an abstract referent, like in the *sit* sentence.

We now turn to the other variable, POSTVERBAL component. Like the annotation of the subject in the original study, this was fine-grained and the original categorisations were based on the Pattern Dictionary of English Verbs. However, for the present analysis, I am only interested in the broader types, which in this case are LOCATION, ADJECTIVE, and OTHER. As mentioned above, I coded for the presence of a postverbal location, regardless of other additional postverbal material. If there was no location present, I originally labelled the sentence as NO LOCATION. After studying the original data, I divide this latter label into those sentences with adjectives instead of location, labelling them as ADJECTIVE, and into those sentences with neither, applying a third label, OTHER. These levels are summarised in Table 3.2, and examples are in (18-a)–(18-c).

TABLE 3.2: Corpus Study I: Three values for POSTVERBAL

Level	Features	Example
<b>Location</b>	[ +LOCATION, ±ADJECTIVE ]	(18-a)
<b>Adjective</b>	[ -LOCATION, + ADJECTIVE ]	(18-b)
<b>Other</b>	[ -LOCATION, -ADJECTIVE ]	(18-c)

The levels of the POSTVERBAL variable require less explanation than those of the SUBJECT, because they concern the presence or absence of lexical categories. Examples of each level are in (18), with the postverbal component boldfaced.

- (18) a. *Postverbal location*  
 A box of chewing tobacco sat **on the desk**; a spittoon stood alongside.
- b. *Postverbal adjective*  
 Some of their biggest metro Atlanta developments are sitting **empty**, but the Russell brothers, partners in H.J. Russell & Co., are weathering the downturn in construction with their firm’s diversified portfolio.
- c. *Postverbal “other”*  
 After initially denying the killing, Barclay pleaded guilty to manslaughter and was sentenced to 15 to 18 years in prison. His attorney filed a motion to revise the sentence, but the request sat **for nearly eight years** until the sentencing judge acted on it.

[COCA]

In (18-a), the postverbal component is *on the desk*, the location of the referent of *a box of chewing tobacco*. In (18-b), there is no location; instead there is a postverbal adjective, *empty* ascribing a property to the referent of the subject. In (18-c), the postverbal component is neither a location nor an adjective. Instead, there is a temporal prepositional phrase, *for nearly eight years*, describing how long the referent of *request* was inactive.

To summarise, this subsection outlined the procedure of the original data collection and annotation undertaken for Fraser (2016). In addition, I noted the deviations and adaptations made for the purposes of the posthoc analysis in this thesis. The results of the study are presented in the next subsection.

### 3.1.3 Results

In this subsection, I describe the results of the annotations and statistical analysis of the 120 observations, which I calculated and visualised using R Studio, version 1.4.1717 (RStudio Team, 2021). The research questions in this study are repeated in (19).

(19) *Corpus Study I: Research questions*

**Q1** What is the most frequent type of subject?

**Q2** What is the most frequent type of postverbal component?

**Q3** Is there an association between the subject and postverbal components?

We will begin with Q1, concerning the SUBJECT variable. The null hypothesis is that all levels are equal, and the alternative that they are not all equal; this alternative hypothesis is non-directional. Table 3.3 lists the absolute and relative frequencies for the levels of the SUBJECT. In this table, the levels are in alphabetical order and the most frequent level is highlighted in grey.

TABLE 3.3: Corpus Study I: SUBJECT distribution, N=120

Level	Frequency	% of Total
Abstract	10	8,3%
Artefact	86	71,7%
Natural	5	4,2%
Immoveable	19	15,8%
	<b>120</b>	<b>100%</b>

As can be seen in the highlighted cells of Table 3.3, the most frequent of the subjects is ARTEFACT, appearing in almost three-quarters of the sentences. Although much lower in frequency, the next most frequent are IMMOVEABLE, like buildings, with 19 sentences (16%). Under 10% are the ABSTRACT (8%) and NATURAL entities (under 5%).

In order to test the significance of this univariate distribution, we can apply a  $\chi^2$  goodness-of-fit test. The crucial assumptions for this test are that 80% of all expected frequencies are greater than 5 and that all expected frequencies are greater than 1 (Gries, 2013, p. 166). The data for SUBJECT meet these, because the expected frequencies are all 30. It is additionally important to bear in mind that the chi-squared test can only be applied to non-directional hypotheses, as it indicates whether there is a significant relationship, not the direction of that relationship. The alternative hypothesis is non-directional, so this is met as well. The results are  $\chi^2(3) = 142,73$ ,  $p_{\text{two-tailed}} < 0,001$ .<sup>15</sup> This means that

<sup>15</sup>Calculated with the `stats` package, a base package of RStudio.

the frequency distribution of the SUBJECT variable differs significantly from the expected distribution.

These data answer Q1, by rejecting the null hypothesis that there is no most frequent type, and confirming the alternative hypothesis that not all levels of SUBJECT are the same. In particular, the data show that ARTEFACT is the most frequently observed level.

Next, we turn to Q2, which concerns the POSTVERBAL variable. Like for Q1, the alternative hypothesis is non-directional, i.e, the frequencies of all levels are the same; the null hypothesis is that all levels have the same frequency. In Table 3.4, absolute and relative frequencies of the POSTVERBAL variable are shown. As with the previous table, the levels are listed alphabetically and the most frequent has been highlighted.

TABLE 3.4: Corpus Study I: POSTVERBAL distribution, N=120

Level	Frequency	% of Total
Adjective	19	15,8%
Location	99	82,5%
Other	2	1,7%
	<b>120</b>	<b>100%</b>

As can be seen in the highlighted cells in Table 3.4, the majority of the sentences were labelled as LOCATION: 99 sentences or roughly 83%. A small portion, 19 sentences (ca. 16%), contained a postverbal adjective in place of a location, and only two sentences (ca. 2%) contained neither. In those two cases, labelled as OTHER, there was a temporal PP; s. §3.1.4 for a discussion.

Like with the univariate distribution of the SUBJECT variable, this distribution's significance can be tested with  $\chi^2$  goodness-of-fit test, to see if the frequencies in Table 3.4 could have arisen by chance. The expected frequencies for all three variables are 40, meeting the required assumption of a minimal threshold. In addition, the alternative hypothesis is non-directional. The results are  $\chi^2(2) = 134,15$ ,  $p_{\text{two-tailed}} < 0,005$ . Like with the SUBJECT variable, the calculated value is quite high and statistically significant, indicating that distribution of the POSTVERBAL variable is not due to chance. These data answer Q2, by rejecting the null hypothesis that there is no most frequent type, and confirming the alternative hypothesis that not all types have the same, equally distributed, frequencies. In addition, we can see that LOCATION is the most frequently observed level of the variable. We now turn to answering Q3, which concerns the potential association of the two variables. The next table and graph set reports the distribution of SUBJECT per POSTVERBAL. Table 3.5 reports the absolute and relative frequencies.

TABLE 3.5: Corpus Study I: Distribution of SUBJECT by POSTVERBAL, N=120

	Abstract		Artefact		Immoveable		Natural	
	Freq.	% Level	Freq.	% Level	Freq.	% Level	Freq.	% Level
Adjective	3	33,3%	10	11,6%	6	31,6%	–	–
Location	4	44,4%	76	88,4%	13	68,4%	5	100%
Other	2	22,2%	–	–	–	–	–	–
	<b>9</b>	<b>100%</b>	<b>86</b>	<b>100%</b>	<b>19</b>	<b>100%</b>	<b>5</b>	<b>100%</b>

As can be seen in Table 3.5, the highest association between the variables is at the levels of ARTEFACT and LOCATION, while the lowest is ARTEFACT with ADJECTIVE. For each level of the SUBJECT variable, the POSTVERBAL level of LOCATION was the most frequent. Two details from this data are outstanding: (i) for the five sentences with a NATURAL level of the subject, only the postverbal level of LOCATION was found; and (ii) the two sentences with OTHER as the POSTVERBAL level had an abstract subject.<sup>16</sup>

For Q3, the data are bivariate, having two variables. The null hypothesis is that there is no association between the two variables, while the alternative hypothesis is that there is an association. Calculating whether there is an association can be done with a  $\chi^2$  test of independence, but R returns a warning when running it for these data. This is because many of the expected frequencies are less than 5, a violation of a crucial assumption for this test. It is instead recommended to use the Fisher's Exact Test, also from the stats package (Gries, 2013; Levshina, 2015). For this test, no statistic like  $\chi^2$  is given, only a p-value. For the association between SUBJECT and POSTVERBAL, the p-value is 0,0023, therefore indicating that there is a significant association between the two variables.

In addition to establishing whether there is an association, I calculated the overall effect size of that association. The relevant calculation for these data is Cramer's V, and the effect size equals 0,355,<sup>17</sup> a moderate effect size (the highest possible value is 1 and lowest is 0; see, e.g., Levshina 2015, §4 for more details).

In sum, this subsection has presented the results of the corpus study and the statistical analysis of these results. All three research questions' null hypotheses could be rejected with significant results. The most frequent level of SUBJECT is ARTEFACT, the most frequent of POSTVERBAL is LOCATION, and these have the highest frequency with one another; this combination was additionally shown to contribute to the effect size, although ABSTRACT with OTHER contributed the most in its two observations. The next subsection discusses the results and design of the corpus study.

### 3.1.4 Discussion

The posthoc analysis of the synchronic corpus study presented in this section answered three research questions. These questions are repeated in (20). Following this, the results

<sup>16</sup>That is, they are outstanding for this small dataset. It is possible in a larger set that other patterns are found.

<sup>17</sup>Cramer's V and the effect size were calculated with `assocstats` from the `vcd` package (Friendly, 2000).



of §3.1.3 are summarised, then these results are discussed with respect to the theoretical preliminaries laid out in §3.1.1. Finally, the design of the study is discussed.

(20) *Corpus Study I: Research questions*

Q1 What is the most frequent type of subject?

Q2 What is the most frequent type of postverbal component?

Q3 Is there an association between the subject and postverbal components?

The first two questions concern univariate data, i.e., with one variable. For both, I formulated the null and alternative hypotheses as non-directional, so that a  $\chi^2$  goodness-of-fit test could be applied. The calculated value for both Q1 and Q2 is quite high and statistically significant; this means that the distribution of the data for this dataset are significantly different from a chance distribution. The answer to Q1 is that ARTEFACT is the most frequent subject type, and the answer to Q2 is that LOCATION is the most frequent postverbal type; both meet my respective predictions made prior to the study.

The third question in (20), Q3, concerns bivariate data, i.e., whether there is an association between the two variables from Q1 and Q2. For this question, the alternative hypothesis was again non-directional, although low expected frequencies returned warnings on a  $\chi^2$  test. Instead, Fisher's Exact Test was used, and it returned a statistically significant p-value, which indicates that there is an association between the two variables and this is not due to chance. That is, the distribution of the data was shown to be significantly different than a chance distribution. Once the association was established, I calculated the effect size of the data, using Cramer's V; the size is a moderate one.

Now we turn to a discussion of the results within the theory introduced in §3.1.1. In particular, two claims are of interest: whether a postverbal location is always needed for the non-literal use of *sit* and whether the subject type's lexical content influences the end interpretation. Let us begin with the first, the simpler of the two. This claim is based on the ideas from the cognitive/typological literature that non-literal uses of posture verbs encode location, and the claim in the German formal literature that posture verbs are a subclass of locative verbs, appearing with a location except under certain circumstances (Maienborn, 1990, 1991). Those circumstances concern contexts where the posture of the subject referent is able to be highlighted. For English, we can see this with a human referent in the literal use, like in (21). However, when the location is removed in the non-literal use, the sentence is no longer well-formed. This is shown in (22), with all four types of subjects that were annotated in the study; note that these are constructed examples for the sake of exposition.

(21) *Omissibility of location for literal uses*

a. I sat (on the couch).

b. My dog sat (on the couch).

(22)	<i>Non-omissibility of location for non-literal uses</i>	
a.	The feeling of sadness sat *(on my heart).	ABSTRACT
b.	<i>Station 11</i> sat *(on the couch).	ARTEFACT
c.	The Empire State Building sits *(on Fifth Ave).	IMMOVEABLE
d.	The leaves sat *(on the driveway).	NATURAL

Even though they appear most frequently, locations are not the only type of postverbal component which is possible. The results of this corpus study have demonstrated that adjectives can appear instead of locations—and the posture of the referent is still not being highlighted—contradicting the claims in Maienborn (1990, 1991).<sup>18</sup> Examples from the corpus are in (23), with the adjective highlighted.<sup>19</sup>

(23)	<i>Postverbal adjectives with non-literal sit</i>
a.	Some of their biggest metro Atlanta developments are sitting <b>empty</b> , but the Russell brothers, partners in H.J. Russell & Co., are weathering the downturn in construction with their firm’s diversified portfolio.
b.	But then I read anecdotal reports of overheated pavers in fire pits exploding. [...] For the rest of year two my fire pit sat <b>unfinished</b> , the open-topped concrete blocks filling up with rain.

In both *sit* clauses, there is no explicit postverbal location describing where the referent of the subjects are located. Instead, the adjective *empty* modifies the referent of the subject in (23-a) and the deverbal adjective *unfinished* modifies the referent of *my fire pit*.<sup>20</sup> The lexical content of both these adjectives have nothing to do with orientation or posture of the subject. In fact, all of the adjectives appearing without a location are variations on *empty* or *idle*. This suggests that the compatible adjectives emphasise the core meaning of the non-literal use, that the referent of the subject is both not moving and not being used (s. §2.3.3). That is, when a house or, say, a shelf is empty, it is inferred that it is not being used; similarly, *idle* or *unfinished* can be equated with not being in use. In the discussion of Corpus Study II’s results in §3.3, we see how the adjectives’ lexical content sometimes is consistent with the pattern in (23), but that there are differences among the three verbs.

In addition to postverbal adjectives, two observations were categorised as OTHER, as they lacked either a location or an adjective. The similarity is most likely not due to the author being the same writer, as the observation in (24-b) is a direct quote. If the dataset were larger, it might be the case that there would be more observations like these, but it is

<sup>18</sup>At least, the results of Corpus Study I contradict those claims for non-literal uses of *sit*. Corpus Study II in §3.2 broadens the scope to include *stand* and *lie*.

<sup>19</sup>In Fraser (2016, 2018), I analysed these postverbal adjectives as secondary depictive predicates. At the time, I had assumed that the non-literal uses had the same structure as the literal uses. In this thesis, however, I analyse the non-literal uses as copular verbs, which means that these adjectives are the primary predicates. This proposal is spelled out in Chapter 5.

<sup>20</sup>Note that I refer to adjectival participles like *unfinished* as “adjectives”, and assume that they predicate a stative property of an individual (s., e.g., Kratzer 2000; Embick 2004; McIntyre 2013; Gehrke 2015 on diagnostics for state modification and Borik & Gehrke 2019 for a recent state of the art on participles.).

unclear. In Corpus Study II in the next section, we will see that such temporal phrases are just as rarely substitutes for locations or adjectives, even when examining the other two verbs.

Let us take a look at these two observations. In both these sentences, the postverbal component is a temporal PP and the subject is abstract. These sentences are listed in (24), with the postverbal component boldfaced.

(24) *Temporal PPs with abstract subjects*

- a. After initially denying the killing, Barclay pleaded guilty to manslaughter and was sentenced to 15 to 18 years in prison. His attorney filed a motion to revise the sentence, but the request sat **for nearly eight years** until the sentencing judge acted on it.
- b. “It’s good that the question sat **for a while**,” said Robert Ellsberg, a former editor of the *Catholic Worker*.<sup>4</sup>

Both of these subject referents are abstract. These instances of postverbal material are different than the postverbal locatives or adjectives: in neither sentence of (24) is a property predicated of the subject.<sup>21</sup> Instead, the use of *sit* in these sentences seem to describe the existence of the subject referent, plus an ‘idle’ inference contributed by *sit*. As a reminder, the ‘idle’ inference accompanies the non-literal uses of *sit* and contributes the interpretation that the subject referent is inactive or idle during the reference interval. For the sentences in (24), the most salient interpretation is that the abstract subject referents exist so long as they are not in use: once a legal request like in (24-a) has been acted upon, it no longer exists; once a question like in (24-b) has been answered, it also no longer exists. Although it remains unclear why exactly this combination is possible, it is interesting to note that the diachronic trajectory of ‘sit’ in Arabic dialects includes a similar stage; this trajectory and an account of it is reviewed in §6.2.2. With respect to this thesis, the combination of abstract subjects with a non-predicative temporal PPs remains an open question.

The second theoretical claim addressed in this corpus study concerns whether the subject type affects the argument structure, a claim from the literature on indeterminate meaning discussed in §2.1. Namely, Spalek (2014, 2015) showed differences in the non-literal interpretation for *romper*, depending on the referent of the theme; mostly whether it is abstract or concrete. It was shown in the previous chapter that the semantics of the inputted subject argument differs across the literal and non-literal divide: the literal uses always need a subject whose referent is sentient and has the appropriate sitting anatomy (§2.2), while the non-literal use does not have such a requirement. In the original study, the idea was to see what type of subjects can combine with non-literal uses of *sit*. In this posthoc analysis, I was interested in whether there is variation across the SUBJECT

<sup>21</sup>A sentence where a temporal property is predicated of the subject can be found in (i).

- (i) The meeting is **from 2 pm**.

levels within the non-literal uses. We know from the Fisher Exact Test that there is a low effect of an association between the SUBJECT and the POSTVERBAL variables. The two combinations which appeared more than expected are ABSTRACT with OTHER and ARTEFACT with LOCATION. The ABSTRACT level in combination with the OTHER level, here only temporal PPs, was only observed twice, out of 9 total observations for abstract subjects. This suggests that while it is unlikely that a temporal PP appears instead of a location or an adjective, this is most likely to happen with an abstract subject referent. The second combination, ARTEFACT with LOCATION was observed 76 times out of 86 total ARTEFACT hits, plus both of these levels are the most common of their variables. As such, neither seems to be good predictors. In addition, as discussed for the sentences in (23), the content of the postverbal adjectives suggests there is a consistency in the core meaning of the non-literal use; if different adjectives were observed, with different content, it would make sense to posit a different shade of non-literal use of *sit*. With the data we have seen so far, however, we can only conclude that the type of subject referent differs across the literal/non-literal divide more generally.

Finally, we turn to a discussion about the design of the corpus study presented and analysed here. This study was originally undertaken for Fraser (2016), which had a different approach to the examination of non-literal *sit*. Namely, at that time, I was interested in cataloguing what was possible for this use. In statistical terms, this is known as a hypothesis-generating approach. For the current presentation, I have been interested in testing claims, an approach that is known as hypothesis testing. Two main weaknesses of this study can be identified: the small dataset and the manual annotation by one person. The first is a constraint deliberately taken on, because semantic annotation in this regard is cumbersome; while there may be some semantically-tagged corpora, their results did not match my needs. A consequence of the small dataset is that it is ineligible for more intricate statistical analysis, plus some of these generalisations might be less pronounced among more sentences. The second is on account of available resources, and is something to be remedied for future studies.

In sum, this posthoc analysis of a previous corpus study has tested theoretical claims from the posture verb and literature on indeterminate meaning. The statistical results demonstrated that artefact subject referents and postverbal locations are most common, both on their own and in combination. While these categories were observed most often, other possibilities were seen as well: referents which are abstract, immovable, or natural entities, and postverbal adjectives, in addition to the most rare temporal PPs. With respect to the postverbal claim, these data suggest that non-literal uses always appear with a postverbal category, but that it is not restricted to locations. With respect to the association between subject type and interpretation, these data suggest that non-literal *sit* consistently encodes lack of movement and inactivity of its subject referent. These claims are revisited in 3.3 with the data from Corpus Study II.

## 3.2 Corpus Study II

Corpus Study II is a follow-up to Corpus Study I. The approach is largely the same in both, although there is one main difference. Namely, in Corpus Study I only *sit* was examined, whereas in Corpus Study II all three core posture verbs, i.e., *sit*, *stand*, *lie*, were examined. In expanding the target set of verbs I was interested to see whether the results of non-literal *sit* parallel those of the other two posture verbs, *stand* and *lie*.

### 3.2.1 Preliminaries

In this subsection, I motivate the research questions and describe how the ones for the present study differ from the ones for Corpus Study I in §3.1. First, I describe the theoretical considerations behind the study, then I submit the research questions which are to be addressed by the results directly and with statistical analysis in §3.2.3.

As was mentioned in the introduction to this chapter, as well as in §2.1/§2.3, the non-literal uses of the three posture verbs are not identical. That is, *sit* retains less of the literal sense in its non-literal use than *stand* and *lie*; the former does not encode orientation of the subject referent, while the latter do. This is demonstrated in (25), using sentences repeated from (3) above.

(25) *Subject orientation differences amongst the posture verbs*

- a. *Station 11* was sitting on the floor, but it was not in a sitting position.
- b. *Station 11* was standing on the floor, #but it was not in an upright position.
- c. *Station 11* was lying on the floor, #but it was not in a horizontal position.

In all three sentences of (25), the subject referent is a book and the postverbal location is the floor. In the *sit* sentence in (25-a), this book is described as being located on the floor, without any inference regarding its orientation; the book could be upright, closed and horizontal, open and horizontal, or anything else. In contrast, in the *stand* and *lie* sentences in (25-b)–(25-c), the book is described as being vertical oriented when *stand* is used in (25-b) and horizontally oriented when *lie* is used in (25-c). This description is indicated by the infelicitous continuation which negates the orientation description.

In undertaking the present study, I was interested in replicating the previous one as closely as possible; the main change being an expansion to the other core posture verbs. In other words, I did not add the orientation of the subject referent as a further variable. A motivation for annotating only subject types and not orientation is that the available context of the sentence was brief: In June 2020, it was not possible to extract the extended context, which I had done in Corpus Study I in May 2016; only the KWIC “keywords in context” was available.<sup>22</sup> This may be due to the fact that the corpus’ host site had been changed in the meantime. Consequentially, it is sometimes not clear what the subject referent’s orientation actually is. For purposes of this thesis, which concentrates on *sit*, it did not merit the further complication of annotating orientation for the sentences

<sup>22</sup>See also FN 10 on KWIC details.

where it was transparent, and leaving a category for non-transparent orientations. Future work, however, could involve a survey of native English speakers judging whether the orientation is encoded.

Turning now to the research questions, let us first address which variables are tested in the present study. Like in Corpus Study I, two are SUBJECT and POSTVERBAL; the levels for these are the same as well, and are repeated in the next subsection. Unlike in Corpus Study I, the present study has a third variable, VERB, with three levels corresponding to the three core posture verbs. The research questions for the present study are enumerated in (26).

(26) *Corpus Study II: Research questions*

- Q1 What is the most frequent type of subject?
- Q2 What is the most frequent type of postverbal component?
- Q3 Is there an association between subject type and postverbal component?
- Q4 Is the association different across the three verbs?

The first two questions of this study, listed in (26), parallel Q1-Q2 of Corpus Study I, and are interested in the most frequent levels of the SUBJECT and POSTVERBAL variables, respectively. Both concern univariate distributions and the hypotheses are non-directional: the null hypothesis for both is that all levels are equally distributed, and the alternative hypothesis for both is that all levels are not equally distributed. Based on the results of the previous study, I predicted that the same level of each variable is most frequent in this dataset as well: ARTEFACT for SUBJECT and LOCATION for POSTVERBAL. That is, even if Corpus Study II has a broader scope, including *stand* and *lie*, all three core posture verbs have been previously classified as encoding spatial relations in their non-literal uses (s. §2.3). While we know now from Corpus Study I that postverbal adjectives are possible, these were observed less frequently than the postverbal locations, a distribution which I did not predict to change greatly.

The third question listed in (26) parallels Q3 of Corpus Study I, in that it asks whether there is an association of the SUBJECT and POSTVERBAL variables. Q3 concerns a bivariate distribution with a non-directional hypothesis; the null hypothesis is that there is no association, while the alternative hypothesis is that there is one. Again, based on Corpus Study I's results, I expected that the most common combination would be ARTEFACT and LOCATION, and there would possibly be a strong association between the SUBJECT level of ABSTRACT and the POSTVERBAL level of OTHER.

The final question listed in (26), Q4, was not in Corpus Study I. That is, Q4 concerns the difference in association across the three verbs, thereby adding in a new variable to the analysis. The null hypothesis of Q4 is that there is no difference, i.e., that all three verbs have the same distribution, and the alternative hypothesis is that there is a difference. As discussed above for (25), there is an inference of orientation in *stand* and *lie* not found with *sit*. Based on this, I predicted that *stand* co-occurs often with immoveable subjects like buildings, which have a large part along the vertical axis; based on that same

information, I expected that *lie* co-occurs with horizontally-oriented subjects, although this is less transparent in the categorical labelling. Regardless of the subject type, I expected postverbal location to still be the most frequent postverbal type. That being said, I did expect that there might be a few *stand* or *lie* sentences without a postverbal component. This prediction is based on the claim in Maienborn (1990, 1991), described in §2.3.2, that when the location is omitted from a posture verb sentence, the orientation of the subject is emphasised. In Maienborn's German data, non-literal 'stand' and 'lie' are often judged as felicitous, while 'sit' was not mentioned. According to my own intuitions about English, non-literal *stand* and *lie* can appear without a postverbal material in specific contexts, such as in (27).

- (27) *Contrastive orientation in the non-literal uses*
- a. The bottle is standing, not lying.
  - b. The bottle is lying, not standing.

The non-literal uses of *stand* and *lie* in (27) both contain immediate context highlighting the orientation. Without that continuation contrasting the vertical or horizontal orientation, respectively, the sentences would be ungrammatical. This is unlike *sit*, where a location or adjective is always required. While these data are important in characterising the differences between the non-literal uses, note that sentences like those in (27) are unlikely to be found in a small corpus study such as the present one. As such, it was not expected that there would be very many location- or adjective-less observations.

To summarise, this subsection has motivated the four research questions of Corpus Study II, and provided predictions for each. The results and statistical analysis in §3.2.3 inform the theoretical discussion in §3.2.4. Before that, however, the methodology is outlined in the next subsection.

### 3.2.2 Methodology

This subsection describes how the methodology for the Corpus Study II differs from its predecessor, Corpus Study I, presented in §3.1. For both, I used the Corpus of Contemporary American English (COCA, Davies 2008–), completing the search on 09 June 2020. For Corpus Study II, I did not limit the genre, in order to increase the number of non-literal uses found in each extraction. This means that the sentences could have come from blogs, the web, tv/movie transcripts, spoken transcripts (such as a radio show), fiction, magazine, newspaper, or academic texts. The search additionally included texts from any year between 1990 and 2019, a longer interval than in Corpus Study I. The total number of hits for each verb in the corpus are listed in Table 3.6.

TABLE 3.6: Corpus Study II: Total number of hits per verb before manual extraction, N= 193.372

	<i>lie</i>		<i>sit</i>		<i>stand</i>	
	n	% verb	n	% verb	n	% verb
<b>Total</b>	46.244	100%	74.378	100%	72.750	100%

For each of the three verbs, I searched both the simple past and past progressive forms. In the same way as for Corpus Study I, the main objective was to omit as many dynamic-encoding and otherwise irrelevant results as possible, and so items such as *around*, *down*, and *up* were excluded. Like with Corpus Study I in §3.1, the analysis in the present section omits aspect from the discussion.

In total, 3.000 sentences were randomly extracted, 1000 for each verb. The corpus interface provides the option of seeing 100, 200, or 500 random sentences at a time and 500 was chosen, and executed twice, in order to have a high possibility of non-literal uses for analysis. Corpus Study II's methodology differs from Corpus Study I, in that the non-literal uses were extracted directly from the corpus interface. Because some years had passed between the two studies, and the corpus is hosted by a different site, with a different interface, it is possible that this option was not available for the previous study. The extraction process included copying-and-pasting the target sentences with their KWIC into Excel spreadsheets, one spreadsheet for each verb. From within each spreadsheet, the relevant, i.e., non-literal, uses were copied to another sheet within the file. The sheet with non-literal uses contained sentences for all three verbs.

As was stated in §3.1.2, for *sat*, *score* was excluded from the search in order to avoid sentences about the standardised college-entry exam ("SAT") in the United States. In the same vein, *night* was excluded to avoid examples with an abbreviated version of *Saturday night*. For *stood*, no additional items were excluded because this is the first corpus search completed with this verb, and it was not clear what should be anticipated. For *lay*, *eggs* was excluded because from a previous exploratory search it was known that the lexicalised phrase *lay eggs* is frequent and transitive. Of course, transitive *lay* is irrelevant no matter the object, but it is productive. This productivity combined with the exploratory nature of the study means that omitting nouns from the postverbal position might affect the results. After extraction, the final number of sentences to be analysed in the dataset are 163.

Within the relevant spreadsheet for the three posture verbs, each sentence was annotated for information including the extraction information (genre, source) and the two variables we saw in Corpus Study I: SUBJECT and POSTVERBAL. The levels for these are listed in Tables 3.7 and 3.8. The referenced examples are from Corpus Study I, as the categorisation criteria is identical.



TABLE 3.7: Corpus Study II: Four levels of SUBJECT

Level	Features	Example
Artefact	[ +moveable, +synthetic, +concrete ]	(14)
Natural	[ +moveable, -synthetic, +concrete ]	(15)
Immoveable	[ -moveable, ±synthetic, +concrete ]	(16)
Abstract	[ -moveable, -synthetic, -concrete ]	(17)

TABLE 3.8: Corpus Study II: Three levels of POSTVERBAL

Level	Features	Example
Location	[ +LOCATION, ± ADJECTIVE ]	(18-a)
Adjective	[ -LOCATION, + ADJECTIVE ]	(18-b)
Other	[ -LOCATION, - ADJECTIVE ]	(18-c)

The levels of each variable are the same as in Corpus Study I. There is, however, one minor difference: within the ADJECTIVE category, I included phrases such as *lying on its side*, which describe how an object is positioned. As is motivated in more detail in §5.4.1, these expressions are adjectival in nature, similar to describing an entity as *lying open* or *lying upside down*.

In sum, this subsection has described the data source and procedure used for Corpus Study II. The methodology of this study differs from Corpus Study I only slightly, with the main difference being that there are two more verbs being investigated; a minor difference is that more genres and years were included in the search query. In the next subsection, the results of the study are presented.

### 3.2.3 Results

This subsection reports the results of the Corpus Study II. Before beginning with the answers to the research questions put forth in §3.2.1, it should be noted that I additionally confirmed that the unaddressed variables did not affect the results. That is, I calculated the odds based on the normed rates of genre and year, and the association of aspect per verb. Neither of these calculations produced a significant result for this dataset. For this reason, genre, year, and aspect will be omitted from further discussion.

As was mentioned in §3.2.2, the final number of sentences is 163.<sup>23</sup> The distribution of observations across the verbs, and within the dataset, can be seen in Table 3.9.

<sup>23</sup>This final number is 5,4% of the 3.000 sentences which were extracted. Remember that the extracted sentences included both literal and non-literal uses. Compare this to the 3,0% of non-literal uses of *sit* observed in the diachronic corpus study reported later in §6.3.

TABLE 3.9: Corpus Study II: Counts after manual extraction, N=163

Verb	Frequency	% Total
<i>lie</i>	83	50,9%
<i>sit</i>	46	28,2%
<i>stand</i>	34	20,9%
	<b>163</b>	<b>100%</b>

The numbers in Table 3.9 reflect the number of non-literal uses per one thousand sentences; these one thousand were randomly extracted from the overall total of the search query. As can be seen in the table, the verb *lie* is the most common to be used non-literally, followed by *sit* and *stand*, which are distributed similarly to one another.

The remainder of the results are presented with respect to the research questions. These questions are repeated in (28).

(28) *Corpus Study II: Research questions*

- Q1** What is the most frequent type of subject?
- Q2** What is the most frequent type of postverbal component?
- Q3** Is there an association between subject type and postverbal component?
- Q4** Is the association different across the three verbs?

Let us begin with Q1, which concerns the levels of the SUBJECT variable. Table 3.10 the distribution of these levels for Corpus Study II, with the most frequent highlighted in grey.

TABLE 3.10: Corpus Study II: Distribution of SUBJECT type, N=163

	Frequency	% Total
Abstract	6	3,7%
Artefact	107	65,6%
Immoveable	31	19,0%
Natural	19	11,7%
<b>Total</b>	<b>163</b>	<b>100%</b>

As can be seen in Table 3.10, the level ARTEFACT is again the most common one. Not only that, it is much more frequent than the other ones. For the SUBJECT, the highest is ARTEFACT at about 65%, followed by IMMOVABLE at about 20% and NATURAL at about 10%; ABSTRACT was the least frequent level, appearing in only 4% of the observations.

In order to test the significance of this univariate distribution, we can apply a  $\chi^2$  goodness-of-fit test. As was noted in §3.1.3, assumptions for this test are that 80% of all expected frequencies are greater than 5 and that all expected frequencies are greater than 1 (Gries, 2013, p. 166). The data for SUBJECT meet these, because the expected frequencies are all 40,75. It is additionally important to bear in mind that the  $\chi^2$  test can only be applied to non-directional hypotheses, as it indicates whether there is a significant relationship, not

the direction of that relationship. The alternative hypothesis is non-directional, so this is met as well. The results are  $\chi^2(3) = 151,28$ ,  $p_{\text{two-tailed}} < 0,001$ .<sup>24</sup> This means that the frequency distribution of the SUBJECT variable differs significantly from the expected distribution. According to the standardised residuals, ARTEFACT was the level which affected the statistic to the highest degree, at a value of 11,98; this level contributed the most to the high  $\chi^2$  value. The other three levels were all negative, which signifies that they were observed less than expected, and their values were all single digits, which signifies that their effect is much lower than ARTEFACT.

These data answer Q1, by rejecting the null hypothesis that there is no most frequent type, and confirming the alternative hypothesis that not all levels of SUBJECT are the same. In particular, the data show that ARTEFACT is the most frequently observed level.

We now turn to Q2, which concerns the variable POSTVERBAL. Table 3.11 displays the distribution of the three levels of this variable, with the most frequent highlighted in grey.

TABLE 3.11: Corpus Study II: Distribution of POSTVERBAL, N=163

	Frequency	% Total
Adjective	13	8,0%
Location	148	90,8%
Other	2	1,2%
<b>total</b>	<b>163</b>	<b>100%</b>

As can be seen in Table 3.11, LOCATION was observed in 90% of the sentences. In contrast, ADJECTIVE was observed in 8% and OTHER in 1% of the data.

Like with the univariate distribution of the SUBJECT variable, the POSTVERBAL distribution's significance can be tested with the  $\chi^2$  goodness-of-fit test, to see if the frequencies in Table 3.4 could have arisen by chance. The expected frequencies for all three variables are 54,33, meeting the required assumption of a minimal threshold. In addition, the alternative hypothesis is non-directional. The results are  $\chi^2(2) = 243,33$ ,  $p_{\text{two-tailed}} < 0,001$ . Like with the SUBJECT variable, the calculated value is quite high and statistically significant, indicating that distribution of the POSTVERBAL variable is not due to chance. The standardised residuals similarly reflect what is seen in Table 3.4: the level LOCATION had a value of 15,56, indicating it occurs much more often than chance and is responsible for the high statistic; the other two levels have values of -6,87 and -8,70 respectively, indicating they were observed less than expected by chance.

These data answer Q2, by rejecting the null hypothesis that there is no most frequent type, and confirming the alternative hypothesis that not all types have the same, equally distributed, frequencies. In addition, we can see that LOCATION is the most frequently observed level of the variable.

Next, we look at Q3, i.e., the relationship between SUBJECT and POSTVERBAL. Table 3.12 reports the distribution of these variables with respect to one another, and the percentages

<sup>24</sup>Calculated with the stats package, a base package of RStudio.

are relative to each level of the POSTVERBAL; the most commonly observed combination is highlighted for each level of SUBJECT.

TABLE 3.12: Corpus Study II: Distribution of SUBJECT and POSTVERBAL, N=163

	Abstract		Artefact		Immoveable		Natural	
	Freq.	% Level	Freq.	% Level	Freq.	% Level	Freq.	% Level
Adjective	–	–	6	5,6%	5	16,1%	2	10,5%
Location	6	100%	101	94,4%	24	77,4%	17	89,5%
Other	–	–	–	–	2	6,5%	–	–
	<b>6</b>	<b>100%</b>	<b>107</b>	<b>100%</b>	<b>31</b>	<b>100%</b>	<b>19</b>	<b>100%</b>

As can be seen in Table 3.12, LOCATION is the most common level POSTVERBAL for all of the SUBJECT levels. For ABSTRACT, it is the only level of POSTVERBAL that was observed for the six sentences. For ARTEFACT, a postverbal ADJECTIVE was additionally observed, but only in 6% of that level's sentences. The SUBJECT level of IMMOVEABLE was the only type where all three POSTVERBAL levels were observed: LOCATION in 77%, followed by ADJECTIVE in 16%, and then OTHER in 7% of that level. Finally, for NATURAL, the LOCATION level was observed in 90% of that level's sentences, while ADJECTIVE was in 10% of that subset.

Let us now apply statistical calculations to these counts. Like for Q3 of Corpus Study I (§3.1.3), the expected frequencies for many of the combinations are less than 5, which is a violation of a crucial  $\chi^2$  test assumption; in addition, four of these combinations have an expected frequency which is less than 0, another violation of the assumptions. For this reason, the Fisher's Exact Test was used to determine whether there is an association but without giving a statistical value to it. The association is p-value of 0,006, indicating there is an association between SUBJECT and POSTVERBAL variables. The overall effect size is low-moderate, with Cramer's V equalling 0,202. These data reject the null hypothesis that there is no association between the dependent variable, POSTVERBAL, and the independent variable, SUBJECT.

Parallel to the analysis of Q3 data in Corpus Study I, the standardised residuals are given for Corpus Study II, so that we can see which combination of variables contributed the most to the effect size. These are displayed in Table 3.13, with the highest values highlighted.

TABLE 3.13: Corpus Study II: Standardised residuals

	Abstract	Artefact	Immoveable	Natural
Adjective	-0,73	-1,54	1,86	0,44
Location	0,79	2,19	-2,86	-0,21
Other	-0,28	-1,96	2,94	-0,51

Seen in Table 3.13, the two positive combinations above the 1,96 threshold of significance are IMMOVEABLE with OTHER (2,94) and ARTEFACT with LOCATION (2,19). This means that these two combinations were observed more than expected, and that this observation

is more than chance. On the negative and significant side, the noteworthy combinations are IMMOVEABLE with LOCATION (-2,86) and ARTEFACT with OTHER (-1,96), the complement of the positive and significant combinations; however, the latter is only borderline significant, being at threshold. The negative value of these residuals means that they were observed less than expected.

Finally, we look at Q4, which is the break down of these contexts across the three different verbs. This is shown in Table 3.14, where the most common context is highlighted.

TABLE 3.14: Corpus Study II: Contexts per verb

Verb	Postverbal	Subject							
		Abstract		Artefact		Immoveable		Natural	
		n	% Verb	n	% Verb	n	% Verb	n	% Verb
<i>lie</i> (N=83)	Adjective	–	–	5	6,0%	1	1,2%	2	2,4%
	Location	3	3,6%	46	55,4%	12	14,5%	14	16,9%
	Other	–	–	–	–	–	–	–	–
<i>sit</i> (N=46)	Adjective	–	–	–	–	1	2,2%	–	–
	Location	3	6,5%	38	82,6%	3	6,5%	1	2,2%
	Other	–	–	–	–	–	–	–	–
<i>stand</i> (N= 34)	Adjective	–	–	1	2,9%	3	8,8%	–	–
	Location	–	–	17	50,0%	9	26,5%	2	5,9%
	Other	–	–	–	–	2	5,9%	–	–

The data in Table 3.14 show that for each verb, ARTEFACT and LOCATION are again the most frequent combination. That being said, the distribution with respect to other combinations differs across the verbs. For *sit*, this combination was observed with the highest proportion, just over 80%; other SUBJECT levels were much lower, with ABSTRACT and IMMOVEABLE being observed in 6.5% of the sentences and NATURAL in only 2,2%. The only other combination of *sit* sentences that was observed is IMMOVEABLE with ADJECTIVE, but this is only observed once. For *lie* and *stand*, on the other, LOCATION with ARTEFACT was observed in about 50% of each subset. For *lie*, within the LOCATION level, the levels of IMMOVABLE and NATURAL occur second- and third-most frequently, respectively, at about 15% each. In the ADJECTIVE level, the SUBJECT levels were observed relatively infrequently: ARTEFACT at 6,0%, IMMOVEABLE and NATURAL at 1–2%. For *stand*, about 40% of the SUBJECT levels are IMMOVABLE; this includes those with LOCATION and OTHER. Interestingly, the only observation of OTHER was with IMMOVEABLE and the verb *stand*. There was additionally 1 observation of ADJECTIVE, and this was with the ARTEFACT level.

Association measures such as  $\chi^2$  test are not applicable to each verb's dataset because there are many expected frequencies that are 0, violating a crucial assumption of the test. I ran a Fisher's Exact Test on each verb subset, which gives a p-value of an association. In alphabetical order of the verbs, the results are the following. For *lie* the p-value is 0,905, for *sit* the p-value is 0,174, and for *stand* the p-value is 0,244. For all three verbs, there is no significant association between the SUBJECT and POSTVERBAL variables. In addition,

the standardised residuals for all three verbs deliver NaN (“not a number”) results for certain combinations, so I do not report them here.

Sometimes it is possible to run a binomial model, or a logistic regression in cases such as these. However, a dataset of 163 observations is rather small. Statistic guidelines generally recommend that one-tenth of the frequency of the least frequent outcome is the maximum number of explanatory variables allowed (Gries, 2015; Levshina, 2015; Brezina, 2018); the many zero frequencies already violate this principle.<sup>25</sup>

In terms of the null and alternative hypotheses for Q4, the applicable statistical analyses suggest that the null hypothesis cannot be rejected for these small data subsets. Although we can see from the observed frequencies in Table 3.14 that *stand* and *lie* have different distributions than *sit* does, there is no significant association between the SUBJECT and POSTVERBAL variables.

To summarise, four research questions were asked for this study, three of which are identical to Corpus Study I, and the fourth which address the addition of *stand* and *lie* to the inquiry. The first three questions’ null hypotheses were rejected, while the last was not, most likely on account of the small dataset. Overall, ARTEFACT and LOCATION were the most frequently observed levels of SUBJECT and POSTVERBAL, respectively; a result which parallels Corpus Study I. In addition, the combination of these two levels was the most frequent combination for each verb, although *stand* and *lie* differ in the relative distribution; *stand* is the only verb to appear with the OTHER type of POSTVERBAL. In the next subsection, these results are discussed.

### 3.2.4 Discussion

The corpus study presented in this section is a follow-up to Corpus Study I, which was presented in §3.1. The first three research questions of the present section are identical to those in the preceding one; the fourth concerns the addition of two more verbs to the dataset. The research questions are repeated in (29). Following this, the results of §3.2.3 are summarised, then the design of the study is discussed. In the next section, the final one of this chapter, these results are discussed with respect to the theoretical preliminaries laid out in §3.2.1, where they are additionally compared to the results of Corpus Study I.

(29) *Corpus Study II: Research questions*

**Q1** What is the most frequent type of subject?

**Q2** What is the most frequent type of postverbal component?

**Q3** Is there an association between subject type and postverbal component?

**Q4** Is the association different across the three verbs?

<sup>25</sup>For curiosity’s sake, I did attempt a binomial logistic regression, but the results strongly overfit the model. I checked this with ANOVA tests on the logistic regression models, with and without the two independent variables. In addition, I did “validation with bootstrapping”: using a `lrm()` object, I ran the function `validate()`, from package `rms`, 200 times (it was not possible to perform more bootstrapping on this model); the slope optimism was 0,3813, which is quite high.

The first two questions listed in (29) concern univariate data. For both, I formulated the null and alternative hypotheses as non-directional, so that a  $\chi^2$  goodness-of-fit test could be applied. The calculated value for both Q1 and Q2 is quite high and statistically significant; this means that the distribution of the data for this dataset are significantly different than a chance distribution. The answer to Q1 is that ARTEFACT is the most frequent subject type, and the answer to Q2 is that LOCATION is the most frequent postverbal type; both meet my respective predictions made prior to the study.

The third question, Q3, in (29) concerns bivariate data, i.e., whether there is an association between the two variables from Q1 and Q2. For this question, the alternative hypothesis was again non-directional, although the low expected frequencies, most likely due to the small size of the dataset, returned warnings on a  $\chi^2$  test. Instead, Fisher's Exact Test was used, and it returned a statistically significant p-value, which indicates that there is an association between the two variables and this is not due to chance. That is, the distribution of the data was shown to be significantly different than a chance distribution. Once the association was established, I calculated the effect size of the data, using Cramer's V; the size is a low-moderate one. The two combinations which were observed more than expected, as shown by the standardised residuals, are IMMOVEABLE subjects with OTHER postverbals and ARTEFACT subjects with LOCATION postverbals.

Finally, the fourth question, Q4, asks whether there is any difference in association across the three core posture verbs. The dataset is overall small, with a total number of observations at 163, and therefore the three subsets for each verb are even smaller. Consequentially, the statistical analysis was limited, as the data violated assumptions of the tests. In addition, the p-values returned from Fisher's Exact Test were not significant for any of the three verbs.

We can identify two outstanding patterns in the data, with the caveat that the following patterns may not be consistently seen in a larger data population: *sit* stands out from the other two in its higher observed frequency of ARTEFACT and LOCATION, and *stand* is noteworthy in its unique combination with the OTHER level of postverbal, which were all observed with IMMOVEABLE subjects. Interestingly, the frequency of *sit*'s most common combination parallels the observed frequency of this combination in Corpus Study I. In §3.3, these details are revisited in a discussion of the results of both studies with respect to theoretical claims introduced in the §3.1.1/3.2.1.

Before that theoretical discussion, I will remark on the study design. As this is a follow-up to Corpus Study I, the design deliberately matched that one. Due to the relative rarity of the non-literal uses, and combined with the size limitations with respect to manual annotation, the ultimate size of the dataset is quite small. Another way to execute a qualitative corpus study is shown later in §6.3, where the diachronic trajectory of both the literal and non-literal uses of *sit* are examined. For this, all hits from the search query were extracted and annotated; although the final number of annotated sentences is much higher in Chapter 7's diachronic corpus study, the relative infrequency of the non-literal use still had consequences for the statistical analysis. While the small size of the dataset could be characterised as a weakness of study design, the number of non-literal

hits in Corpus Study I-II, as well as the diachronic study in §6.3, reflects how infrequent non-literal uses generally are in comparison to the literal ones.

As an alternative, controlled studies are also an option for empirical investigation, where the researcher can test hypotheses in different ways and can control various factors. Considering that this thesis intends to fill an empirical and theoretical gap about non-literal uses of posture verbs, analysing the naturally-occurring data in corpus studies is a better match than the testing of constructed examples; looking at these naturally-occurring sentences gave insight on the postverbal possibilities, as well as the distribution of subject types, which might have been overlooked in an experiment. That being said, future work could test the results and claims of the present chapter, in addition to incorporating tests about the evaluative inference mentioned in §3.1.1 or the orientation of the subject in *stand* and *lie* sentences, as mentioned in §3.2.1.

In addition, it is not clear to what extent the distribution is due to the semantics of the verbs, or whether it is a due to different combinations of SUBJECT and POSTVERBAL. A follow-up study could use a baseline effect in the statistical analysis to investigate this.

To sum up, my predictions were clearly met for Q1-Q3. That is, I had predicted based on Corpus Study I that ARTEFACT level of SUBJECT and LOCATION level of POSTVERBAL would be the most frequent, also in combination. For Q4, I had predicted that if there is any difference in association across the three verbs, it would be between *sit* and *stand/lie*. This is what was seen, although not in a statistically significant way. In the final section of this chapter, I discuss how the results of this study can or cannot address the theoretical claims laid out in §3.2.1, in addition to comparing these results to those in Corpus Study I.

### 3.3 General discussion

In this section, I discuss the results of the Corpus Study II with respect to the theoretical claims made in §3.2.1 and to the results of Corpus Study I. The section ends with an outlook for the subsequent chapters of the thesis.

Three claims are of interest in the present discussion: (i) postverbal material is required for the non-literal uses and it is assumed to be a location, (ii) the non-literal uses of the verbs differ in orientation encoding, and (iii) the conceptual type of the subject referent can affect the interpretation of the non-literal use. I follow the claims in structuring the discussion. That is, first I show which postverbal components are possible besides locations, demonstrating this with corpus examples. Then I talk about how any difference between the verbs might be linked to orientation encoding, which leads to a review of the data with respect to this inference of orientation encoding. Finally, any influence of subject type is presented and discussed.

Claim (i), about the postverbal component, is based on ideas from the cognitive/typological literature that non-literal uses of posture verbs encode location, being candidates for the Basic Locative Construction cross-linguistically (§2.3.1), and the claim in the German



formal literature that posture verbs are a subclass of locative verbs, appearing with a location except under certain circumstances (§2.3.2). Those circumstances concern contexts where the posture or orientation of the subject referent is able to be highlighted. We saw constructed examples of this in this chapter in §(1), (6), (21)–(22). In addition, Corpus Study I’s results presented §3.1.3 demonstrate that postverbal adjectives are not uncommon, occurring in 15% of that dataset, and that temporal PPs can additionally appear, although this is rare (2 observations, or 1,7%). In Corpus Study II’s results in §3.2.3, we saw a similar pattern for all three verbs: postverbal adjectives were observed in 8% of the sentences and postverbal temporal PPs in 1,2%.

With the two observations of the OTHER, the only SUBJECT level is IMMOVEABLE, and the only verb is *stand*. Both observations are in (30), where the postverbal element is boldfaced.

- (30) a. The building stood **for over eighty years until it was demolished** [...]  
 b. [...] where the flanged gate stood **for millennia**.

In both observations seen in (30), the postverbal element is a temporal *for*-phrase, and the SUBJECT level is IMMOVEABLE. It is interesting that the referent of the subject with *stand* and a postverbal temporal phrase is a concrete one, while for similar observations with *sit* in Corpus Study I, the subject referent is abstract. Although the observation is quite rare in the Corpus Study II dataset, it partially matches the prediction in Maienborn (1990, 1991) that if any verb omits the location, it would be *stand* and *lie*, the verbs more strongly encoding orientation (see below); the constructed examples in her work concern concrete referents only. However, if this is the case, it is unclear why there were not more observations like this and why *stand* was more frequent in this context than *lie*. In order to better understand this pattern, a study with a larger data would need to be carried out. It is possible that the rarity of these observations reflects an innovative grammatical pattern that future generations will acquire and be using more often (s. theory on diachronic semantics in Chapter 6).

For now, we remain in the present and look at observations of postverbal adjectives with all three verbs. The examples in (31) show each verb with a postverbal adjective.

- (31) *Sample observations with postverbal adjectives*  
 a. Her eyes crinkled as her ears lay **flat**, tail wagging [...]  
 b. [...] she’d] gone off to college and then moved out for good, the sunny room sat **untouched**, like a museum. Now it held the stale smell of cigarettes.  
 c. The house was cramped, but stood **three stories tall**.

In (31-a), the referent of the subject is what seems to be the ears of a dog.<sup>26</sup> of what seems to be a dog and they are described as being located flat against the head, horizontally oriented. This is in contrast to a perked or upright position, or a position where the ears are simply hanging; the specifics would depend on the type of dog. In (31-b) the referent of the subject is a room, and it is ascribed the property ‘being untouched’; the subsequent

<sup>26</sup>These were labelled as NATURAL, instead of IMMOVEABLE, because dog ears can move around.

material emphasises this description. In (31-c), the referent of the subject is a house, and like the other immovable subjects with postverbal adjectives, it combines with *tall*; in this sentence *tall* combines with a measure phrase, then with the subject. It seems that the adjective describes the height in contrast to the otherwise cramped quarters. The overall orientation of this subject referent is vertical, which is compatible with *stand*.

As described in §2.3.2, according to Maienborn (1990, 1991) the eligible contexts for omitted locations are when the orientation is highlighted. From the previous examples of *lie* and *stand* in (31-a)/(31-c), it might appear that a highlighted orientation is akin to contrastive orientation, especially as the content of the adjective underlines the orientation. This additionally reflects the data: all the postverbal adjectives for *lie* and *stand* describe orientation of the subject referent, a point to which we return in the discussion of claim (ii). On the other hand, the *sit* sentence in (31-b) neither has an adjective describing orientation, nor is there a contrast with respect to an orientation. Although in Corpus Study II there is only one observation of a solitary postverbal adjective with *sit*, in Corpus Study I the observed solitary postverbal adjectives were all synonyms of *empty* and/or *idle* (§3.1.4). The difference between type of adjective suggests that there are differences in the non-literal uses of *lie* and *stand* in comparison with *sit*, even if the statistical analysis in Q4 does not reflect this.

So far we can identify a difference within the non-literal side of the literal/non-literal divide, but we still remain without an analysis of why adjectives can substitute locations in non-literal uses of posture verbs. In Chapter 5 of this thesis, I propose that this is because the non-literal uses of *sit* are in fact copular verbs, not lexical verbs. The copular analysis accounts for the predicate variation observed in both corpus studies of the present chapter; this means that unlike their literal counterparts, the non-literal uses require a predicative component. However, as discussed above, *stand* and *lie* do not always require a location or adjective. The rarity of location-less instances suggests that *stand* and *lie* are less developed than the non-literal use of *sit*. In §7.4, I discuss the possibilities for the diachronic development of *stand* and *lie*.

We now address claim (ii), about the orientation of the verb's subject referent. As was shown above for the sentences in (31), there is a distinction between *lie/stand* and *sit* and the content of their postverbal adjectives, at least in this dataset. If we look at the types of adjectives appearing in conjunction with postverbal locations, another interesting pattern emerges. Table 3.15 displays the frequencies per verb; there are 22 in total, which represents 15% of all the observations labelled with LOCATION in Corpus Study II.

TABLE 3.15: Corpus Study II: Observations with both postverbal adjective and location, N=22

Verb	Frequency	% Subset
<i>lie</i>	13	59,1%
<i>sit</i>	6	27,3%
<i>stand</i>	3	13,6%
	22	100%

In Table 3.15 it is apparent that *stand* appears with this combination the least frequently. In addition, the three observations with *stand* contain adjectives not describing orientation, but states like we saw with *sit*: *alone*, *full of rusty flowers*, and *untouched*. These are displayed in (32).

- (32) *The adjectival content in combination with a postverbal location: stand*
- a. More often than not, the turbines were standing **alone**, usually on farms or smallholdings, [. . .]
  - b. Next to the animals stood a blue vase **full of rusty metal flowers**.
  - c. A glass of water stood **untouched** before him.
- [COCA]

In all three of the sentences in (32), the use of *stand* is non-literal, because the referent is not animate and therefore not actively maintaining a standing position. Based on world knowledge, it is understood that these referents are vertically oriented, considering that turbines, vases, and drinking glasses are typically taller than they are wide. The boldfaced adjectives, however, predicate a non-orientation adjective of the referent; meanwhile, the postverbal locations describe the location of that referent. Thus, the three sentences in (32) more closely resemble non-literal uses of *sit* than the non-literal uses of *stand* that we have seen so far.

The next orientation-encoding verb, *lie*, is shown in Table 3.15 to have the highest frequency of adjective and location combination. Within the 13 observations of *lie*, only 1 contains an adjective describing the orientation of the subject referent. This observation is in (33-a) and another with a non-orientation encoding adjective is in (33-b).

- (33) *The adjectival content in combination with a postverbal location: lie*
- a. His hard hat lay **top down** several feet away, [. . .]
  - b. Gus sniffed and pointed at the detritus that lay **thick** upon the ground.
- [COCA]

The *lie* sentence in (33-a) contains both a postverbal adjective and a location, and it describes the referent of *his hard hat* as being horizontally oriented in a certain area of the ground. The expression *top down* describes a non-canonical orientation of the hat. This differs from the orientation described by the adjectives in (32), in that those adjectives contrasted horizontal or vertical orientation with a complementary one in the context; for example, dog ears were described as laying flat, in contrast to the ears being vertical or moving around. For the adjective in (33-a), the contrast is not to a vertical orientation of the hard hat, but to a different part of it being in contact with the ground. The *lie* sentence in (33-b) is furthermore different, in that the trash referent of the subject is described as being in great amounts on the ground, but not necessarily in a horizontal orientation. With this non-orientation-encoding adjective, the use of *lie* in (33-b) resembles the *stand* sentences in (32) or more generally the non-literal uses of *sit*.

Finally, we turn to those *sit* sentences with the postverbal adjective and location combination, shown in Table 3.15 to have the second-highest frequency. For the 6 observations of *sit*, 2 had adjectives encoding orientation of the subject referent, while the other 4 had adjectives that are synonyms of *empty* and/or *idle*. The two encoding orientation are in (34); I do not include examples of the other 4, as they are consistent with what we have seen so far with non-literal uses of *sit*.

- (34) *The adjectival content in combination with a postverbal location: sit*
- a. The cylindrical conductor's cap sat **askew** on his head.
  - b. [...] the old cathode TV and a fourth Wii we hadn't even seen arrive sat **propped** on an old fruit crate [...]
- [COCA]

In (34-a), the referent of the subject is a hat, and it is described as being positioned in an off-centre way on the head of the conductor. This way of positioning the hat is in contrast to, e.g., a well-centred hat; the hat is technically being used at the time of reference, but it is not otherwise in movement. In (34-b), the referents of the subject are electronic devices, and they are described as being supported by a wooden crate. That is, the point of contact is not solely with the ground, but also with the vertically-oriented part of that crate. This orientation of the devices is in contrast to them being either fully horizontal or vertical. Interestingly, in these two instances of *sit* with an orientation-encoding adjective, the orientation being encoded is not a canonical one. If anything, the content of these adjectives is suggestive of the postverbal adjective's role in highlighting information in the context, and not necessarily emphasising some part of the posture verb's meaning. For the diachronic proposal in §7.1, which is based on a corpus study reported in §6.3, I argue that postverbal adjectives are crucial elements to the diachronic change of *sit* from a lexical verb to a copular verb.

Another point in the discussion of claim (ii) involves examining sentences with *stand* or *lie* where the orientation clearly contradicts what the verb would be expected to encode. For *stand*, besides the sentences in (32), where the orientation of the subject referent is backgrounded, there is one with a natural referent, shown in (35).

- (35) [...] a **hazy moon** stood above a bank of clouds to the east. [COCA]

In (35), the moon is described as being located at a certain point in the sky. However, there is no orientation along a vertical axis; even if the moon were not full, such a description would not be possible. This use of *stand* could highlight the high position of the moon, but this is not clear from the provided context. It can be said that the sentence in (35), like those in (32), is not necessarily encoding orientation and thereby resembles the non-literal uses of *sit*.

For *lie*, we see more observations with immoveable abstract subject referents not necessarily describing a horizontal orientation. These are shown in (36).

(36) *Observations of lie without horizontal orientation*

- a. Yesterday, a thousand rescue workers labored on the site where **hundreds of homes** lay buried beneath the rubble.
- b. [...] clearly **the trauma** lay just below the surface [...]
- c. **The shop** lay in a suburban strip mall.

[COCA]

In all three sentences, the subjects are not necessarily horizontally oriented, which is unexpected for *lie* based on what has been said so far. In (36-a) the subject is a large number of houses and in (36-b) the referent is abstract and cannot take a particular form; in (36-c), the subject is a single store. As the abstract subject type is quite rare, it might be possible to argue that these are simply outliers. However, a generalisation that IMMOVEABLE subject types do not always encode the horizontal orientation is still unlikely, as it is possible to find counterexamples in the dataset. These are in (37).

(37) *Observations of lie with a horizontal orientation and immoveable subject*

- a. The Chatham breach opened **a section of the barrier beach** that lay about a kilometer across Chatham Harbor from the inner shore.
- b. **The sea** lay there serenely; **the large port** lay there like an open mouth.

[COCA]

In the sentences of (37), the subject referents are all immoveable, although some like the beach in (37-a) and the sea in (37-b) are natural and immoveable, while the port, also in (37-b) is (wo)-man-made and immoveable. In this way, the examples from this small dataset do not provide conclusive evidence about whether orientation is obligatorily encoded in *stand* and *lie* sentences. Rather, the data suggest that *stand* has a strong tendency to encode orientation, and *lie* a possibly less strong one. From a diachronic perspective, this could indicate that *stand* is the least advanced in its non-literal path, followed by *lie*, then finally *sit*.

To sum up this discussion of claim (ii), it has been confirmed that orientation encoding differs across the non-literal uses of the three verbs. In particular, it has been shown that *sit* consistently does not describe anything about the subject referent's orientation, unless the postverbal adjective explicitly does so; in the examples we saw that this occurs only when there is additionally a postverbal location and that the orientation of the referent is not a sitting position, but somehow non-canonical. In contrast, in *stand* and *lie* sentences the subject referent's orientation is almost always described; sometimes *lie* with an immoveable referent seems to not describe a horizontal orientation. Although future work can make these claims more concrete, these data already indicate that *sit* is not identical in its non-literal uses to *stand*, and *lie*.

The final claim to be discussed here is claim (iii), concerning whether the the subject type can affect the interpretational output. This concerns a claim from the literature on indeterminate meaning (e.g., Spalek 2014, 2015, s.a. discussion in §2.1). Namely, there

are differences in the non-literal interpretation for *romper*, depending on the referent of the theme; mostly whether it is abstract or concrete. It was shown in the previous chapter that the semantics of the inputted subject argument differs across the literal and non-literal divide: the literal uses always need a subject whose referent is sentient and has the appropriate sitting anatomy (§2.2), while the non-literal use does not have such a requirement. The *sit* data from Corpus Study I suggest that for the non-literal uses of *sit*, regardless of subject type there is an interpretation that the subject referent is not moving and inactive. The statistical analysis of Corpus Study II data, presented in §3.2.3, show that while there is a low-moderate effect of subject type on postverbal type, across the verbs there is no effect—at least not for the small dataset presented here.

Additionally, there is a variety of subject types which are possible for each verb; in this section alone we have seen examples of not just artefact referents, but also natural, immovable, and abstract ones. This variety does not seem to be divisible into certain types for uses of *stand* or *lie* which strongly encode orientation and those which do not. Looking at *stand* first, we saw examples above with immovable and artefact referents in (32), and a natural referent in (35), where the subject's orientation either was backgrounded or not transparently vertical. Abstract subject referents were not observed in this dataset for *stand*. For *lie*, we saw a referent which was ambiguous between natural and artefact in (33-b), as well as immovable and abstract referents in (36), in sentences where the orientation was similarly unclear. These examples suggest that the subject type of the theme does not affect the end interpretation in the same way that it does for Spanish change-of-state verbs like *romper*, the case study by Spalek (2014) discussed in the present chapter's introduction. In addition, those instances of non-transparent orientation are snapshots of a diachronic change-in-progress of *stand* and *lie*.

To conclude, the discussion in this section demonstrated some differences and similarities within the non-literal uses of *sit*, *stand*, and *lie*. First, it was shown that the three verbs almost always appear with some sort of postverbal component, most often a location (with other material), sometimes an adjective, and rarely a temporal PP. This result for English contradicts previous characterisations that Germanic posture verbs in their non-literal uses only encode spatial relations. In the second part of the discussion, we moved away from the similarities shared amongst the verbs and looked at how they differ. Namely, *sit*'s non-literal use is unconcerned with orientation, unless other content in the linguistic context introduces such information; this suggests that *sit*'s non-literal use is devoid of any orientation meaning. The other two verbs, *stand* and *lie* mostly encode an orientation of the subject referent, although a few observations were found where this was not as strong as was expected. That is, moons can be said to “stand” even though no contact is made with a supporting ground, and tall buildings can be said to “lie” even though they seem to be vertically oriented. Such examples are possibly indicative of an ongoing shift in the non-literal uses of *stand* and *lie*, moving them closer to reanalysis, like we see for non-literal *sit* (s. diachronic proposal in Chapter 7). Finally, it was discussed that while there is a clear divide between argument structure between the literal and non-literal uses of all three verbs, on the non-literal side of the spectrum, further shades of meaning are

not discernable per subject type.

We have seen in the naturally-occurring data in Corpus Study II that *stand* and *lie* pattern differently in their non-literal uses than *sit*. As there is a clear division between the verbs, in the remainder of this thesis I concentrate on *sit* only. In other words, I use *sit* as a case study, establishing the foundation for future work on non-literal uses of posture verbs—or other verb classes with various non-literal meanings. This fine-grained investigation of *sit* continues in the next chapter, with an examination of the subject types which combine with this verb.





## Chapter 4

# Subjects and inferences across the literal/non-literal divide

This chapter has two parts: the first, which investigates the different subject types combining with *sit*, and the second, which examines the meaning status of the two inferences introduced in §2.3.3. Both parts concern the literal as well as the non-literal uses of *sit*. In the previous chapter, two synchronic corpus studies were reported. The data from these studies provide important insights on the non-literal uses of the core posture verbs. In this introduction to the present chapter, I describe four insights from the corpus studies which are relevant to the present chapter, and then present the content of this chapter. The first insight contradicts accounts which associate the posture verbs with spatial relations and which regard the postverbal location as an argument (s. overview in §2.3.1–2.3.2). Namely, the results of the corpus studies reported in §3.1.3 and §3.2.3 included observations of postverbal adjectives instead of locations. Examples with *sit* from each corpus study are in (1).

- (1) *Corpus examples of postverbal adjectives*
- a. Some of their biggest metro Atlanta developments are sitting **empty**, but the Russell brothers, partners in H.J. Russell & Co., are weathering the downturn in construction with their firm's diversified portfolio.
  - b. [... she'd] gone off to college and then moved out for good, the sunny room sat **untouched**, like a museum.

[ COCA ]

In neither sentence of (1) is there a location. Instead, a property, 'empty' or 'untouched', is predicated of the subject referent. Without either a location or adjective, the sentence would not be well-formed. Simplified versions of the corpus ones are in (2).

- (2) *Postverbal material obligatory for non-literal sit*
- a. \*Some of their biggest metro Atlanta developments are sitting.
  - b. \*The sunny room sat.

The interchangeability of this postverbal material suggests that the postverbal location is not an argument of the posture verb. Instead, as I propose in Chapter 5, non-literal *sit* is

actually a copular verb (§5.1), and postverbal locations/adjectives are the main predicates of the non-literal use (§5.3–5.4).

The next two insights are about orientation of the subject referent and again about the postverbal component. As reported in §3.2, the sentences extracted for Corpus Study II comprise many uses of *stand* and *lie* with, respectively, a vertical or horizontal orientation of the subject referent.

(3) *Orientation encoding for stand and lie in corpus examples*

- a. He walked toward the tree that **stood** not too far from the well, [. . .]
- b. A frost-dusted slab of beef **lay** within, its juice the same color as the blood on the concrete.

[ COCA ]

The sentence in (3-a) describes the location of a tree, and the use of *stood* describes that tree as being vertically oriented. The sentence in (3-b) describes the existence of beef in a freezer, and the use of *lie* describes that piece of meat as being horizontally oriented with the ground. In contrast, a sentence with non-literal *sit* only can describe the subject referent's orientation if there is an adjective, such as *askew* in (4), whose content explicitly ascribes such a description. Even so, the orientation is not parallel to a sitting position.

(4) The cylindrical conductor's cap sat **askew** on his head.

Additionally, in §2.3.2, we saw constructed examples demonstrating non-literal *stand* and *lie*'s ability to appear without a postverbal component, specifically in contexts where the orientation of the subject referent is contrasted. The examples in (5) illustrate.

(5) *Non-literal uses and contrast of posture*

- a. The wine bottle is standing, not lying.
- b. The wine bottle is lying, not standing.
- c. ??The wine bottle is sitting, not standing|lying.

In the sentences with *stand* and *lie* in (5-a)–(5-b), the orientation of each subject referent is clearly contrasted, and therefore highlighted. According to Maienborn (1990, 1991), this licenses the location's omission. The *sit* sentence in (5-c), on the other hand, is not well-formed without any postverbal material and there is no orientation to be contrasted. While possible for *stand* and *lie*, such contexts are rare, as is evidenced by only two examples of *stand* being observed without any postverbal content (s. §3.2). They are at least possible with *stand* and *lie*—in contrast to *sit*, which in its non-literal use lacks any orientation encoding. I argued in Chapter 2 that such differences motivate an analysis where non-literal *sit* is more advanced diachronically than *stand* and *lie*. In the present and subsequent chapters, I focus the examination on *sit*.<sup>1</sup>

<sup>1</sup>In the diachronic analysis in Chapter 7, I do comment on the trajectory of *stand* and *lie*.

The final relevant insight concerns the subject type data from both synchronic corpus studies in Chapter 3. Namely, they revealed that a wide variety of subjects can combine with the non-literal uses,<sup>2</sup> contrasting an impression given by the accounts reviewed in §2.3, that non-literal uses of posture verbs only combine with moveable inanimate subjects, typically artefacts, and that immoveable subjects are difficult in this combination. The data of both synchronic corpus studies reported in Chapter 3 showed that while artefacts are the most common, other subject types, including immoveable ones, are available as well. In §4.1, I propose a systematic typology of the possibilities for *sit*, building on said corpus data as well as constructed examples and naturally-occurring ones sourced from separate Google searches. The section ends with a discussion of possible counterexamples and arguments on how my typology can account for them.

The following section, §4.2, examines more closely the meaning components introduced in §2.3.3, establishing them as two separate inferences. When applicable, these two different inferences describe the subject referent as ‘stationary’ and as ‘idle’.<sup>3</sup> The former inference is shown in (6), with infelicitous same-speaker continuations for both the literal and the non-literal use.

- (6) *‘Stationary’ inference across the literal/non-literal divide*
- a. Phil sat on the sofa for a half hour. . .  
#He periodically got up and sat back down during those thirty minutes.
  - b. *The Banja Luka Weekly* sat on the sofa for a half hour. . .  
#I periodically picked it up and put it back down during those thirty minutes.

In the literal sentence in (6-a), the referent of the subject is described to be in a sitting position and this sitting position is on the sofa, for an interval of thirty minutes. During that interval, it is possible that the referent was nodding or making movements with his hands, as both the head and the hands are non-essential body parts; felicitous examples with such small movements were presented in §2.3.3. Although he may have moved his head or hands, it is not possible that Phil in (6-a) changed his overall location from the ground. This is suggested by the infelicity of the continuation describing him as getting up from and relocating himself to the sofa multiple times. In the non-literal sentence in (6-b), the referent of the subject is a newspaper, and it is described to be on the sofa for an interval of thirty minutes. Like for the literal use, it is possible that pages, a non-essential part, fluttered, but not possible that the entire newspaper changed its overall location. Throughout the discussion of the proposed subject types in §4.1, this ‘stationary’ inference is targeted with same-speaker cancellations. Then, I demonstrate in §4.2 with further diagnostics that this inference is in fact entailed by the posture verb, regardless of whether it is a literal or a non-literal use.

<sup>2</sup>Throughout this chapter, I often use “subject” interchangeably with “subject referent”, in order to avoid excessive wordiness. This is unlike other chapters, which go beyond this typology and where there might arise terminological confusion with such fluidity.

<sup>3</sup>As in the previous chapters, I use “inference” as a cover term until a more precise meaning status is identified.

The second inference concerns the ascription of ‘idle’ to the subject referent, and it seems to be possible with the non-literal use only. Note that I hedge here with “seem”, because the ‘idle’ inference is more complex. It is discussed in more detail in §4.2. An example with a compatible same-speaker continuation is found in (7) with the non-literal use.

(7) *The Banja Luka Weekly* sat on the counter until Phil read it.

In (7), the newspaper is described as being located on the counter for an interval before Phil used it. It is inferred that during the sitting interval, the book was not used. In (8), a same-speaker continuation contradicting the unused reading is infelicitous.

(8) *The Banja Luka Weekly* sat on the counter for half an hour.  
#During that time, Natasha was actually reading it.

For the sentence in (8), it is odd to describe the book as being read during the same interval of *sit*. Like with the ‘stationary’ inference, I target the ‘idle’ one throughout the discussion of the proposed subject types in §4.1; it is strongly present for all subject types, but I point out where complications might arise.

Even though it might seem as if the ‘stationary’ and the ‘idle’ inferences are similar, both being non-cancellable in same-speaker continuations, I show in §4.2 that in fact the former comprises at-issue content, and the latter not-at-issue content. This separation is relevant both for the synchronic account in Chapter 5, where I propose a definition of both uses’ at-issue content, but also for the diachronic account in Chapter 7, where I build upon the synchronic account and propose how literal *sit* became non-literal *sit*. This diachronic trajectory involves a inference motivating one stage of the transition, and I argue that the ‘idle’ inference is the relevant one.

To summarise, the main research goals of this chapter are: to delimit the possible subject types with *sit* and to determine the nature of the ‘stationary’ and the ‘idle’ inference. The first goal is addressed in §4.1 and the second, after the inferences are targeted throughout the discussion in §4.1, is addressed in §4.2. The chapter concludes in §4.3.

## 4.1 The subjects that sit, literally and non-literally

In the present section I detail the types of subjects that appear with both the literal and non-literal uses of *sit*, building on insights from the corpus studies of Chapter 3 and the theoretical overview in Chapter 2.

A binary animate/inanimate split for the two types of uses is suggested in the literature, usually implicitly, or else authors do not characterise at all what the criteria of a subject might be (s. overview in §2.3). We have already seen in §2.2.2–2.2.3 that anatomy determines which sentient animals can assume a sitting position. In this section I expand on those observations and show that animals without the correct anatomy can appear in combination with *sit*, but with a non-literal interpretation. These combinations, being less common than those with artefact subjects, are less productive across contexts. Overall

across the subject types combining with non-literal *sit*, there are nuanced differences, for example in preference for postverbal component and in availability of the ‘idle’ inference. By investigating these differences, we gain a clear understanding of the breadth of non-literal *sit*.

I distinguish each subject type by four features, each representing intrinsic properties of the subject NP. That is, each NP has a different combination of properties, and this contributes to whether it can be interpreted with a literal or a non-literal use. As was first shown in Chapter 2, an important contrast between the two uses is the thematic role: literal uses of *sit* select an agent and non-literal uses a theme.

(9) *Different thematic roles across the (non-)literal divide*

- |    |  |             |
|----|--|-------------|
| a. | Christian (deliberately) sat in Annie’s seat.            | LITERAL     |
| b. | <i>The Paris Review</i> (#deliberately) sat in his seat. | NON-LITERAL |

Based on data such as in (9), I argued in §2.3.3 that the literal uses have subjects which are most likely agentive, or at least external arguments of the verb. In contrast, the non-literal uses’ subjects are themes and therefore internal arguments. That is, each use subcategorises for a thematic role and not for the specific features. In Chapter 5, I argue that the literal use is a lexical verb and that the non-literal use is a copular verb. The feature-based typology proposed in the present section is more fine-grained than agent vs theme, or external vs internal subjects.

In this proposal, I have attempted to posit features which reveal minimal distinctions between each subject category. Although it would have been possible to create a typology with an open-ended number of features, such an ad hoc approach is unappealing because it is difficult to falsify. The properties which constitute the *sit* typology are listed in (10) and described in more detail below.

(10) *Proposed features of the subject typology*

- a. [ + animate ] : the subject is sentient and has volition
- b. [ + butt ] : the subject has the proper sitting anatomy, i.e., a butt attached to the torso
- c. [ + moveable ] : the subject is able to move or be moved from location with relative ease
- d. [ + concrete ] : the subject is not abstract

All of the features in (10) are valued with “+”, the combination which is required for literal *sit*.<sup>4</sup> If the subject referent lacks any of the above features, i.e., if any are valued with “–”, the use of *sit* cannot be literal.

<sup>4</sup>In §2.1.1, I presented a non-literal *sit* example with a human being, i.e., with a subject referent that has all of the features in (10), repeated in (i). In the discussion of this example, I argued that the context, not the subject type, delivers the non-literal interpretation. In §4.1.6, I return to these types of non-literal *sit* sentences.

- (i) Phil sat in his house for days, not yet ready to return to work.

Animacy, the feature in (10-a), is drawn from the discussion in §2.3.3. Animacy is a broad concept in the literature, and in this dissertation I understand it to denote that the subject is both sentient and is capable of volition. If the subject is, e.g., non-sentient, this means that it is also inanimate. Both sentience and volition belong to the list of possible proto-agent properties of Dowty (1991); as Dowty himself argues, the properties may overlap one another but they are not all necessary.

The anatomical feature, represented by [+butt] in (10-b), is in reference to the discussion in §2.2.2–§2.2.3, where I propose the anatomical requirements for an entity to be able to be in a sitting position. This proposal includes specifics about the angle of the legs to the torso when in a sitting position, and what body part is in contact with the surface of the location. The feature [-butt] is relevant for distinguishing between different types of animals, such as aquatic ones or reptiles, discussed in §4.1.2. In addition, this typology considers subjects which are non-sentient, hence inanimate, and which have an animal shape, such as balloon or stuffed animals; this subject type is discussed in §4.1.3. This feature was not seen in the corpus studies of the previous chapter.

Moveability, the feature in (10-c), is based on the moveability of the figure with respect to the ground (Talmy 1972 and subsequent works).<sup>5</sup> Moveability was also a subject category in the corpus studies of Chapter 3. This feature was relevant in other authors' accounts, such as those reviewed in §2.3.1 on the Basic Locative Construction and in §2.3.2 on the postverbal locative. Additionally, throughout the examination of the 'stationary' inference in §2.3.3 (s.a. examples in (6) above), I noted that the non-literal uses typically require the possibility of an external participant moving the figure to/from the location. In this way, moveability does not correspond to "autonomous movement", a proto-agentive property of Dowty (1991) for the non-literal uses, although it is relevant for the literal uses with agentive subjects.

Some inanimate entities such as lamps or coffee cups are typically moveable unless they are statues, and buildings are typically immovable unless they are toys. However, there are some entities like water or trees which can be either moveable or immovable. In determining the value of the feature, it is only relevant whether the figure can be moved from the ground, whether on its own or with the help of an external participant. To better understand the difference, let us compare the naturally-occurring sentences in (11) to one another.<sup>6</sup>

In (11-a), the water subject is in the form of puddles temporarily located somewhere, in this case next to roads. In (11-b), the water subject is in the form of a lake not temporarily located somewhere, as it is immovable.

<sup>5</sup>Here the interpretation of "moveable" is looser than Talmy's original definition, in that I consider removal of the entity to fall under the umbrella of 'moveability'.

<sup>6</sup>By "naturally-occurring" in this chapter, I mean they were found using the Google search engine. To override the default OR operator in Google searches, I inputted the query with quotations, e.g., "whale was sitting". I used Google, and not corpus data, because these subject types are very rare in corpora, in particular copy-edited corpora.

- (11) *Water can be moveable or immoveable*
- a. In Santa Clara, **large puddles** sat alongside the roadways.<sup>[g]</sup>
  - b. This [**lake**] sits in the middle of Gambier Island and it takes quite the effort to get there.<sup>[g]</sup>

The puddle in (11-a) is located by the roadway, until it “moves” by drying up or if somebody clears up the liquid. In contrast, the lake in (11-b) is located in the middle of the island more or less permanently. The elimination methods used for the puddle would have to be applied on a much larger scale for the lake. For both, a location is required. This is demonstrated with the minimal pair in (12).

- (12) *Postverbal component always obligatory for non-literal sit*
- a. Large puddles sit \*(next to the road).
  - b. The lake sits \*(next to the road).

Regardless of the amount of water, this combination patterns the same with respect to a required postverbal location. The difference between the two sentences in (12) has to do with the interval of the eventuality: while posture verbs are associated with interval stativity, or homogeneous states which can be temporally bounded, immoveable entities cannot combine as easily as moveable entities can with the core posture verbs. This is discussed in more detail in §4.1.4.

Finally, we look at the feature of concreteness from (10-d). Either the referent of the subject is concrete, like those in (11)–(12) and most of the other examples in this thesis, or it is abstract, such as some of the naturally-occurring examples in the corpus studies of Chapter 3. In the latter cases, it is important to identify and then exclude lyrical sentences, which, like idioms, are not transparent. A poetic sentence and a plain counterpart to it is in (14).

- (13) *Abstract subject referents, lyrically and plainly*
- a. Today **my grief** sat in a parking lot. My grief looked like me watching little girls giggle with their mothers in a department store, wishing that could be me again.<sup>[g]</sup>
  - b. **The feeling of grief** sat \*(heavy|on my heart).







The sentence in (13-a) personifies the emotion of grief. In the first sentence the grief is described as being located in a parking lot, and in the second sentence, this entity is described as resembling the speaker; neither descriptions are semantically transparent. It is difficult to apply the diagnostic of omitting the postverbal component to (13-a), because of the lyrical nature of the prose. In contrast, the same emotion, is described as being located on the speaker’s heart, with the inference that it is an emotional weight. The postverbal material in (13-b) cannot be omitted, patterning like the other uses of non-literal *sit* seen thus far. Due to the non-transparency of lyrical sentences like in

(13-a), these types of *sit* uses are omitted from further discussion. Therefore, only uses of *sit* with abstract subjects, such as in (13-b), will be discussed in §4.1.5.

A fully fleshed-out permutation of the first two features, [ $\pm$ animate,  $\pm$ butt] in (10-a)–(10-b), accounts for four of the six subject types. All four of these are both [+moveable] and [+concrete]. Such a complete permutation is not possible for the second two features, [ $\pm$ moveable,  $\pm$ concrete]. For one, when an entity is [–concrete], no other feature is applicable. Secondly, when an entity has the [–moveable] feature, both [ $\pm$ butt] are possible, while [+animate] is marginally allowable; a potential counterexample for this is a longterm coma patient, although sentience, and therefore animacy, is debatable.

A preview of the subject types with their relevant features is summarised in the examples in Table 4.1. For ease of exposition, I refer to each subject type by an entity seen in relevant examples, though this chosen entity is not meant to be a prototype or to have some heavier significance. These entities are represented in Table 4.1 with icons.<sup>7</sup>

TABLE 4.1: Subject types and uses of *sit*

Type	Selectional features	Use
a. 	[ + concrete, + animate, + butt, + moveable ]	<b>literal</b>
b. 	[ + concrete, – animate, – butt, + moveable]	<b>non-literal</b>
c. 	[ + concrete, + animate, – butt, + moveable]	<b>non-literal</b>
d. 	[ + concrete, – animate, + butt, + moveable]	<b>non-literal</b>
e. 	[ + concrete, – animate, $\pm$ butt, – moveable]	<b>non-literal</b>
f. 	[ – concrete ]	<b>non-literal</b>

The first row of Table 4.1 shows the literal use of *sit*, and it is represented by a dog. This icon is the only one featuring the respective entity in a sitting position, thereby underlining the impossibility for posture predication of the other types, the non-literal subject referents. The selectional features of the dog are [+concrete, +sentient, +butt, +moveable], because it is not abstract, it is sentient, it does have the appropriate sitting anatomy, and it is able to move. All of the other rows are labelled as non-literal uses, because they lack one or more of the essential features for literal subject referents. Examples of each type are in (14), where the letters of the examples correspond with their subject type.<sup>8</sup>

<sup>7</sup>All icons in this section's tables made by [Freepik](https://www.freepik.com) from [flaticon.com](https://www.flaticon.com).

<sup>8</sup>In these examples, the simple past is used, although progressive *sit* is possible as well. As was noted in each corpus study (§3.1–3.2), the aspectual distribution is not a significant one. That is, I assume the aspectual forms to be interchangeable unless otherwise noted.



- (14) *Subject types and uses of sit*
- |    |  |             |
|----|--|-------------|
| a. | The <b>dog</b> sat (alone on the sidewalk).          | LITERAL     |
| b. | The <b>coffee cup</b> sat *(empty on the table).     | NON-LITERAL |
| c. | The <b>whale</b> sat *(idle in one spot).            | NON-LITERAL |
| d. | The <b>balloon dog</b> sat *(alone on the sidewalk). | NON-LITERAL |
| e. | The <b>castle</b> sat *(empty on the hill).          | NON-LITERAL |
| f. | The <b>heartbreak</b> sat *(heavy in his stomach).   | NON-LITERAL |



A defining structural feature of non-literal *sit* is that it requires a postverbal component, while literal *sit* does not. This is illustrated by the grammaticality judgments in (14).

In the following subsections, I explore each subject type of the non-literal use and discuss any properties or constraints particular to the relevant type. In addition, a consistent property of both uses is that the subject is not moving with respect to its overall location, while the non-literal use carries an additional inference that the figure is idle or unused. In the subsequent subsections, I apply the postverbal diagnostic and target the two inferences with same-speaker cancellations in each subsection. In §4.2, the meaning status of these inferences is investigated with further diagnostics.

#### 4.1.1 Coffee cups and clouds

In both synchronic corpus studies of Chapter 3, the most common subject type observed was artefacts. This subject type is additionally what is found in the prototypical BLC (Basic Locative Construction) scene, used mainly in typological studies to identify a language's strategy for encoding spatial descriptions (s. §2.3.1). In the present chapter, these moveable, concrete, inanimate entities are represented by a coffee cup. In Table 4.2, the cup-type is listed in the highlighted row (b), along with the literal use in (a); both are included for comparison, and rows will be added to the table as we proceed through each subsection.

TABLE 4.2: Subject types and uses of *sit*

Type	Selectional features	Use
a. 	[ + concrete, + animate, + butt, + moveable ]	literal
b. 	[ + concrete, - animate, - butt, + moveable ]	non-literal

In Table 4.2, the two different types share the features [+concrete, +moveable], but differ in the [ $\pm$ animate,  $\pm$ butt] features. In this and the following subsections, the introductory example has a boldfaced subject and the obligatoriness of the postverbal component, a defining feature of the non-literal use, is indicated.

(15) *Artefacts as non-literal subjects*

- a. **The coffee cup** sat \*(empty|in the sink).
- b. **A radio** sat \*(dusty|next to the sink).

Non-(wo)man-made entities are included in this category, because they also have the relevant features of [+concrete, -animate, -butt, +moveable].<sup>9</sup> Examples are in (16).

(16) *Natural entities as non-literal subjects*

- a. **A cloud** was sitting \*(over the cove).
- b. **The pine cones** were sitting \*(in the grass).
- c. **Some water** was sitting \*(in our driveway).

The subjects of (16) are all natural entities. While a cloud (16-a) is a malleable substance and could be perceived as a person in a sitting position, it is not something that is necessarily found in a sitting position, nor is the entity actually sitting in a literal way. Neither the pine cone in (16-b) nor the water in (16-c) are able to be in a sitting position at all. In all three sentences, postverbal material such as a location is needed.

Due to their lack of volition and sentience, i.e., their inanimacy, it is inferred that some external participant or external force caused the cup-type entities to be located where they are. The use of *sit* indicates that these entities do not move from the location during the reference interval, an inference pattern first introduced in §2.3.3. This is illustrated with a literal use in (17) and two non-literal uses in (21)–(22). All three examples have same-speaker continuations targeting whether or not the subject is moving.

(17) **Ally** was sitting on the couch.

- a. She was studying hard for the chemistry exam. NO MOVEMENT
- b. #She was bouncing up and down on the couch. MOVEMENT

(18) During the talk, **a glass of water** sat on the table.

- a. The glass stayed on the table during the talk. NO MOVEMENT
- b. #Phil nervously moved the glass back and forth during the talk. MOVEMENT

(19) All last week, **a huge puddle** was sitting in the road.

- a. Nobody got rid of it and it caused some accidents. NO MOVEMENT
- b. #The city came out and moved the water right away. MOVEMENT

For the literal sentence in (17), only the continuation in (17-a) is felicitous, because in this sentence Ally is not moving the essential body part, the butt, and she therefore did not change her overall location during the reference interval. In contrast, the continuation in (17-b) is infelicitous, because Ally is moving her butt from the ground in the jumping movements. Similarly, in the non-literal sentences of (18)–(19), the felicitous

<sup>9</sup>This is in contrast to the categorisation of the corpus study, where I had separated natural from unnatural. For the typology, I do not include an extra “natural” feature, because such subject types appear to bifurcate based on their moveability feature, not whether they are found in nature .

continuations are the ones where the figure does not change their overall location during the reference interval, and the infelicitous ones contain situations where the figure does move. This data indicates that *sit* encodes a meaning of non-movement, regardless of whether the use is a literal or a non-literal one. As was noted in the introduction to this chapter, I argue in §4.2 that the ‘stationary’ inference seen in (20)–(22) is an entailment. An additional inference often accompanies the non-literal use. In §2.3.3, I argued that this inference ascribes an ‘idle’ and/or ‘unused’ property to the subject referent. In (20)–(22), I use the same sentences as in (17)–(19), and the continuation instead targets this second inference of activity/use.

- (20) **Ally** was sitting on the couch.
- a. She did nothing during that time. IDLE
  - b. She was studying hard for the chemistry exam. ACTIVE
- (21) During the talk, **a glass of water** sat on the table.
- a. Nobody touched it during the talk. IDLE
  - b. #Phil drank from it with a straw. ACTIVE
- (22) All last week, **a huge puddle** was sitting in the road.
- a. A detour had to be organised, and nobody touched the puddle. IDLE
  - b. #Kids from all over town came to jump in the puddle. ACTIVE

In the examples of (20)–(22), the ‘idle’ inference is targeted with continuations. As can be seen by the judgements, this inference is not present in both uses of *sit*. For the literal use in (20), it is possible to say that Ally is not actively doing anything and also that she is studying, an activity that requires not only thinking but also movement of the hands and arms. The non-literal uses with a cup-type subject in (21)–(22) pattern differently than the literal use: when the continuation describes a context where the glass or puddle is not being used, as in the (a) sentences, it is felicitous; when the continuation describes a context where the glass or puddle is being used, as in the (b) sentences, it is infelicitous. It is possible, however, to find instances of the non-literal ‘idle’ inference when the subject referent is active. Naturally-occurring examples can be seen in (23).<sup>10</sup>

- (23) *Active devices can combine with sit*
- a. A similar thing [= automatically jumping to a different channel] happened to us when the TV **was sitting** in a spot where (hot summer) sunlight would hit the front control panel.<sup>[g]</sup>
  - b. So over the last weekend I knocked a glass of sprite onto my desk and some leaked off the side where my desktop **was sitting** (with it’s side panel open). The computer immediately froze up/shut down [ . . . ]<sup>[g]</sup>
  - c. During the opening, his laptop **sat** casually on the lobby’s new onyx-fronted desk, whirring away with the new program.<sup>[g]</sup>

<sup>10</sup>Thanks to Yasutada Sudo (p.c.) for these counterexamples.

In both examples of (23), a computer is the subject referent; this referent is not interpreted to have moved. In (23-a), the TV was on, actively being watched when the channel changed itself; in (23-b), the computer was active when liquid damage occurred; and in (23-c), the computer was running some software. Interestingly, all three subject referents are devices, which in (23), are on but not actively being manipulated. Instead, the sentences of (23) describe situations where something else happened while the device was on. This suggests that “in use” is equatable with non-homogeneous, non-passive, activity. Modified examples are in (24), with continuations targeting active use.

(24) *Devices which are in use cannot combine with sit*

- a. The TV was sitting on the cabinet #while I was flipping channels.
- b. My laptop was sitting on the desk. With one arm I spilled a full glass over it #while with the other I was typing.
- c. My laptop sat on the lobby’s front desk, #while I busily worked on updating the new system.




In (24), the activities of the continuations describe active use, or change, to the subject referent. These continuations, unlike those in (23), are infelicitous, suggesting that the ‘idle’ inference is connected not just to activity, but a specific type of activity. Namely, a subject referent like a device can be on, running a programme without the intervention of a user, an external participant, and combine with *sit*; the device cannot combine with non-literal *sit* and simultaneously be used by an external participant in a way that involves manipulating the device, such as changing the channel or typing. The data in (21)–(24) indicate that the ‘idle’ inference is present in non-literal *sit* sentences with coffee-type subjects, and that this inference is contradicted by active use or interaction with the entity by an external participant. The contradiction is infelicitous when cancelled in a same-speaker continuation, suggesting that the ‘idle’ inference is consistently present with the cup-type subjects and non-literal *sit*.

In the next subsection, we look at another subject type, animals without the proper sitting anatomy. The same diagnostics of postverbal obligatoriness and inference cancellation are applied to this next type.

#### 4.1.2 Whales and snakes

The second non-literal subject type concerns entities which are typically sea animals, insects, or reptiles. Such animate beings might have legs, but are unable to bend those legs or angle their torso into a sitting position (s. §2.2.3 on literal posture and non-human referents). In Table 4.3, this subject type, represented by a whale, has been appended to the previous table and is in the highlighted row (c).

TABLE 4.3: Subject types and uses of *sit*

Type	Selectional features	Use
a. 	[ + concrete, + animate, + butt, + moveable ]	literal
b. 	[ + concrete, - sentient, - butt, + moveable ]	non-literal
c. 	[ + concrete, + animate, - butt + moveable ]	non-literal

Examples of the whale type are found in (25).<sup>11</sup> The subject of the posture verb is boldfaced.

(25) *Naturally-occurring examples of whale-types*

- a. **The whale** was sitting relatively motionless in 25 ft of water in one of the narrowest parts of the river's mouth.<sup>[g]</sup>
- b. [ ...] it was a small viper that had startled the macaques. [**The viper**] sat curled on the ground completely still.<sup>[g]</sup>
- c. Most of the guests had just come back from a magical skiff tour where a **humpback whale** was sitting under their boat hanging out.<sup>[g]</sup>
- d. **The giant snake** sat perfectly still as Bill Booth eased toward it. The python was partly coiled and mostly hidden in ankle-deep scrub, but Booth could see enough of it to know this was a big one.<sup>[g]</sup>

None of the animals in (25) have a butt or legs, anatomy which would enable them to be in a sitting position. The sentences in (25-a) and (25-b) have both a postverbal adjective and a postverbal location, while (25-c) has only a location and (25-d) only an adjective. In (26), the naturally-occurring sentences are simplified for closer examination of their postverbal content; in these examples ‘#’ and not ‘\*’ is used, as without the postverbal material, there is a cartoon interpretation available.

(26) *Whale subjects and the postverbal component*

- a. The whale was sitting #(motionless|in the river's mouth).
- b. A small viper sat #(curled|on the ground).
- c. A humpback whale was sitting #(under their boat).
- d. The giant snake sat #(perfectly still).

In the isolated sentences of (26), the postverbal component is shown to be required. Although either a postverbal adjective or location is possible, it seems common to have both. In addition, the postverbal adjectives which combine with the whale-type subject

<sup>11</sup>The introductory examples for this and the subsequent sections are naturally-occurring sentences, sourced from a Google search. I chose to present these instead of constructed ones, because unlike the cup-type subjects, these other types are less common, have not been seen as much so far in the thesis, and extended contexts might help non-native speakers understand the use more clearly.

emphasise a lack of movement of the subject. This is similar to what we saw in the naturally-occurring corpus examples of Chapter 3. There, the adjectives highlighted the lack of movement and/or idleness/disuse of the subject referent.

Let us examine these adjectives with this whale subject type more closely. First, in (27), the sentences are shown with only a postverbal location, and the sentence without a location in the original text has been modified to also have one; the locative is boldfaced.

- (27) *Whale subjects with only a locative*
- a. #The whale was sitting **in the river's mouth**.
  - b. #A small viper sat **on the ground**.
  - c. A humpback whale was sitting **under their boat**.
  - d. #The giant snake sat **in the scrub**.

Among the sentences of (27), only (27-c) is felicitous. The difference between that one and the other three is due to the nature of the location: in (27-c), the location is the water region under a boat, which means there is no surface. In contrast, the other locations have a surface: in (27-a) the mouth of a river is quite shallow, so the surface is the shallow ground; in (27-b) the surface is the ground; and in (27-d) the surface is the ground within the scrub. This surface feature is important, because, as is argued in §2.2, the definition of a sitting position comprises contact with a horizontal surface, the ground. That is, when such a surface is salient in sentences with this subject type, the subject referent is interpreted as being in a sitting position on top of that surface—which is an odd interpretation, considering their anatomy. In the sentence in (27-c), without such a surface, there is no forced interpretation and the sentence is felicitous without an intervening adjective.

Now we will look at the sentences with a postverbal adjective only. These are in (28), where the adjective is boldfaced; the humpback whale sentence did not originally have a postverbal adjective, so I have added one.

- (28) *Whale subjects with only a postverbal adjectival*
- a. The whale was sitting **motionless**.
  - b. A small viper sat **curled (up)**.
  - c. A humpback whale was sitting **stuck**.
  - d. The giant snake sat **perfectly still**.

Unlike the locative-only sentences, these sentences are felicitous.<sup>12</sup> This is particularly interesting because, as we will see in the diachronic corpus study (§6.3), postverbal adjectives play an important role in the pragmatic processes underlying the diachronic change from literal to non-literal *sit*. I argue there that when a postverbal adjective appears with the literal use of *sit*, the adjective is focussed, and alternatives concerning the state of the

<sup>12</sup>Of course, if they are uttered completely out-of-the-blue, they would be marginal, but in a larger context with the respective animal or their habitat, the sentences are felicitous. For example, for (28-a), this context could be a situation including descriptions about swimming or boating.

subject are evoked; these alternatives are in reference to an idle state, rather than the posture of the subject.

Something similar is happening here, and it is due to the [+animate] feature: these animals, having volition and being sentient, are capable of movement. As this capability cannot extend to putting themselves into a sitting position, an adjective is needed to diminish the saliency of the posture meaning. A literal and a non-literal sentence each describing autonomous movement of the subject referent in the first clause and which has *sit* in the second is in (29).

- (29) *Necessity of a postverbal adjective with the whale subjects*
- |    |  |             |
|----|--|-------------|
| a. | Phil walked around . . .<br>and then sat (curled up) by the tree.          | LITERAL     |
| b. | The snake slithered around . . .<br>and then sat #(curled up) by the tree. | NON-LITERAL |

In both sentences of (29), the subject referent is described in the first clause as moving around, and it is understood that these sentient beings moved themselves. The second clause is different, however, depending on whether *sit* is used literally or non-literally. The literal *sit* sentence in (29-a) is felicitous with or without *curled up*, while the non-literal *sit* requires such an expression for felicity.

To confirm the idea that the adjective emphasises that the subject is not moving, the examples in (30) show the infelicity of adjectives or adjective-like expressions describing the subject as moving.

- (30) *The impossibility of whale subjects moving about*
- a. #The whale was sitting **wild** in the river's mouth.
  - b. #A small viper sat **dancing about** on the ground.
  - c. #A humpback whale was sitting **visibly agitated** under their boat.
  - d. #The giant snake sat **noisy** in the scrub.

As can be seen in (30), the adjective, or a similar expression, cannot describe a whale-type subject as motionless. This observation brings us back to the inference pattern of §2.3.3, which was revisited for the cup-type subjects in (21)–(22). An example with a whale-type subject is in (31).

- (31) A viper was sitting by the tree.
- |    |                                 |             |
|----|---------------------------------|-------------|
| a. | It did not move from that spot. | NO MOVEMENT |
| b. | #It was slithering around.      | MOVEMENT    |

Considering the discussion of the adjectival content above, it is unsurprising that a continuation encoding movement is infelicitous, as in (31). These whale-types additionally carry an inference of idleness, shown in (32).

- (32) A viper was sitting by the tree.

- |    |  |        |
|----|--|--------|
| a. | It just stared at us.                  | IDLE   |
| b. | #It tracked the movements of its prey. | ACTIVE |

In (32-a), the snake is described as staring at the speakers, in a way that is not actively changing, and this continuation is felicitous. This is similar to the examples at the end of §4.1.1, where a television or computer can combine with *sit* when it has a programme running without further change or interaction by an external participant. The continuation in (32-b), however, describes the snake as watching another animal with the intention of hunting it; this continuation is infelicitous following a non-literal *sit* sentence. The content of this active continuation in (32-b) suggests that non-literal *sit* is incompatible with a situation where the subject is actively calculating something.<sup>13</sup> It is different than the cup-type idleness discussed in §4.1.1, because the whale-type subjects are sentient and capable of moving themselves.

The ‘idle’ inference in (32) is only possible to calculate if the subject referent is stationary. Unlike for the non-sentient cup-type subjects, it is difficult to find examples, constructed or naturally-occurring, where the ‘idle’ inference is separate from the ‘stationary’ one. This is possibly due to their general rarity, but also possibly due to the paucity of possible activities for a stationary whale-type subject. Nonetheless, the above discussion has demonstrated that an ‘idle’ inference is strongly present, and that adjectives encoding idleness, or something similar, are present with these subject types and non-literal *sit*.

In summary, these whale-type subjects prefer postverbal adjectives over postverbal locations, although at least one category is required. Like in the other non-literal *sit* sentences we have seen so far, the sentences with these subjects carry the ‘stationary’ inference, and are often associated with idleness. The next subsection will add a row to the table for subjects that have the anatomy for sitting but which are not sentient.

### 4.1.3 Balloon dogs and dead bodies





This subsection addresses the subject types which have the proper sitting anatomy, but which are not sentient.<sup>14</sup> Examples include toys which are shaped like animals able to be in a sitting position, or sedated/dead animals. This subtype is called the balloon-dog-type and is displayed in row (d) of Table 4.4.

<sup>13</sup>It is difficult to attribute thoughts or intentions to animals, and this example might be contended for this reason.

<sup>14</sup>A subject like a balloon animal is reminiscent of a famous example in the adjective literature: *stone lions* (Kamp & Partee, 1995). Similar types are things like *paper swan*, *glass horse*, *wooden duck*, *balloon dog*. All of these entities are in animal shapes but otherwise lack features of the respective animals, including sentience.



TABLE 4.4: Different uses of *sit*

Type	Selectional features	Use
a. 	[ + concrete, + animate, + butt, + moveable ]	literal
b. 	[ + concrete, - animate, - butt, + moveable ]	non-literal
c. 	[ + concrete, + animate, - butt, + moveable ]	non-literal
d. 	[ + concrete, - animate, + butt + moveable ]	non-literal

Unlike with the other subject types, I do not begin the examples with the represented icon, a balloon dog, because naturally-occurring examples with a balloon animal are difficult to find. Rather, the more common entity in this category is a corpse.<sup>15</sup> Balloon-type examples are found in (33), where the subject is boldfaced.

(33) *Naturally-occurring examples of balloon-dog-type subjects*

- a. When the journalists arrived, **a corpse** was sitting in an open ambulance. Another body was carried out by emergency workers and neighborhood men pulling away wreckage from a large cinder-block home.<sup>[g]</sup>
- b. **A quirky dog statue** sat in the garden, while the shelves were full of memorabilia from his career.<sup>[g]</sup>

In (33-a), the sentence describes the scene after an airstrike in Libya. The subject of the non-literal posture verb is a dead body; it is not entailed that the body is in a sitting position. Similarly, in (33-b), the subject is an inanimate dog, in the form of a statue; it is not entailed that the dog is in a sitting position. Both sentences of (33) contain a postverbal location. Removing this location, or otherwise omitting a postverbal element, would render the sentence infelicitous, as is shown in (34).

(34) *Balloon-dog-type subjects require a postverbal component*

- a. When the journalists arrived on the scene, a corpse was sitting #(in an open ambulance).
- b. When the journalists arrived on the scene, a corpse was sitting #(frozen).
- c. A dog statue sat #(in the garden), while the shelves were full of memorabilia from his career.
- d. A dog statue sat #(frozen), while the shelves were full of memorabilia from his career.

Interestingly, if the location is changed to a sitting apparatus, it is infelicitous to use a balloon-dog-type subject, i.e., one that is [-animate, +butt], with the non-literal use. The

<sup>15</sup>In the end, the icon was chosen not for the iconicity, but because it is not morbid and because it clearly represents the non-sentience of the animal.

infelicity with a sitting apparatus is similar to the infelicity with a horizontal surface in the whale-type subjects, shown in the previous section. For the balloon-dog-type subjects, who are [+ butt], a sitting apparatus more strongly forces an interpretation that the subject referent is in a sitting position. This is shown in (35), with constructed examples; the sitting apparatus is boldfaced.

- (35) *Balloon-dog-type subjects cannot “sit”*
- a. Yesterday, a body was found in the park.  
#The body was sitting **on a bench**.
  - b. A lion is drugged before being transported abroad.  
#The lion sat **in row four**.

The subjects of both (35-a) and (35-b) have both a butt and legs, but the sentences are judged as infelicitous. This infelicity is due to the most salient interpretation being unsettling or bizarre: a dead body in a sitting position on a park bench is unsettling (35-a) and a drugged lion in a sitting position in an airplane chair is somewhat bizarre (35-b). For both sentences to be felicitous—without changing any lexical material—the context would have to include an external participant who either arranged the non-sentient subject into a sitting position after the killing or drugging, or, in the case of (35-a), the external participant could have killed somebody who was sitting on the respective bench, and the corpse was left there in a sitting position. These are possible scenarios, but only felicitous with specific contexts.

Interestingly, these sentences are felicitous when the locations change from *on a bench*, *in row four*. That is, when the locations are changed from seats, there is no forced interpretation of the posture verb’s original lexical content, hence inanimate subjects with butts and legs can felicitously combine with non-literal *sit*. This was seen above in (33-a) and is illustrated in (36).

- (36) *Balloon-dog-type subjects cannot “sit”*
- a. The body was sitting in {the morgue| my uncle’s house}.
  - b. The lion sat in {the airplane hold| loading area}.

Instead of an apparatus for sitting, the locations are bigger: a building in (36-a) and the spaces where luggage is stored in (36-b). For these sentences, the most salient interpretation is in fact that the subject is not in a sitting position but rather horizontally oriented, i.e., lying down. Even without an entailment of being in a sitting position, there is an inference that an external participant was involved in causing the non-sentient subjects to be located in those places. This external participation underscores the inanimacy, in particular the non-sentience of this subject type; compare this to the dog- or whale-type subjects, who could have put themselves at the relevant location.

For these dead and drugged beings, the most likely orientation in felicitous contexts is a horizontal one, while the second most likely is slumped over. According to my proposal in §2.2, a slumped over body could meet the definition for English *sit*, as the butt is

still the point of support. However, the lack of sentience, including the inability of this person to transition out of the posture, eliminates the possibility of it being a literal use. Another balloon-type subject is a skeleton, like the ones used in anatomy class or as decoration, regardless of whether they are real or artificial. These pattern semantically with the human corpse and the drugged lion, as is shown in (37).

- (37) Every year for Halloween, we decorate the front garden with skeletons and homemade jack-o-lanterns. Between holidays, **the skeletons sit in the attic.**

In (37), the subject of *sit* is skeletons. While these entities can be positioned to be in a seated position, the most likely interpretation is rather that they are in a box or hanging somewhere in the attic. A forced seated interpretation, like in (35) would be marked. Another similar subject is one with the proper anatomy but made from artificial material, like a balloon animal, seen in (38).

- (38) Phil brought home a [balloon dog and giraffe]<sub>i</sub> from the birthday party. Now **they<sub>i</sub> are sitting** in the living room.

In (38), the subject of *sit* is a balloon shaped like an animal which can in real life put itself into a seated position. As a non-sentient balloon animal, however, this possibility is not there, unless its creator chose this orientation. The most salient interpretation of (38) is not that the balloon dog and giraffe are seated on the living room sofa. Rather, they are interpreted to be located somewhere in this room, likely on the floor or a table. Regardless of the specific location, these balloon animals can only be oriented vertically on their four legs, horizontally on a side, or diagonally if leaning against something; in other words, not in a sitting position.

Finally, we look at this subject type with respect to lack of motion. Just as with the cup- and whale-types, the balloon-dog-type of subject in combination with *sit* carries an inference that the subject is stationary.

- (39) Phil's balloon animals sat on the floor all day yesterday.
- |  |             |
|--|-------------|
| a. They stayed in the same place the entire time.    | NO MOVEMENT |
| b. #Phil moved them to the cabinet during that time. | MOVEMENT    |

The same-speaker continuation in (39-a) describes the motionless state of the balloon animals during the reference time. This continuation is felicitous. The same-speaker continuation in (39-b), in contrast, describes the balloon animals as being moved. This continuation is infelicitous, suggesting that the utterance carries an 'stationary' inference. The next sets of sentences examine the 'idle' inference, continuations targeting content encoding 'active use'. In (40), the subjects are balloon animals, and in (41), the subject is a corpse.

- (40) Phil's balloon animals sat on the floor all day yesterday.
- |   |      |
|---|------|
| a. He didn't play with them during that time. | IDLE |
|---|------|

- b. #The cat was playing with them during that time. ACTIVE
- (41) The victim's body was sitting in the morgue for three weeks.
- a. Nobody examined it during that time. IDLE
- b. #The medical examiner performed an autopsy during that time. ACTIVE

The first continuations in (40-a) and (41-a) describe the balloon animals as being idle, and it is felicitous. The second continuation in (40-b) and (41-b) describes the balloon animals as being actively used, and this continuation is infelicitous. Like with the whale type subjects in §4.1.2, it is difficult to find counterexamples in the wild. These constructed examples demonstrate that the 'idle' inference is also present with the balloon-dog type of subjects.

In summary, the balloon-dog-type subject prefers locations which are not a sitting apparatus. There does not seem to be a preference for a postverbal adjective, like what was seen for the whale-type subjects in §4.1.2. With respect to the two features [ $\pm$  animate,  $\pm$  butt], we have now seen all possible permutations of them. There are further features, however, and therefore further subject types. Next up is the immovable type.






#### 4.1.4 Castles and lakes

The above subject types are all moveable ones. The present subsection turns to the immovable type: the castle-type. This subject type includes both natural and (wo)man-made entities, including castles, towns, mountains, and lakes. As noted in the introduction of this section, the concept of moveability has been relevant to other accounts, such as those looking at the Basic Locative Construction (s. §2.3.1) and at German locative verbs from a formal perspective (s. §2.3.2). In particular the former accounts, on the Basic Locative Construction, give the impression that posture verbs combine with moveable subjects only. However, we know from the corpus studies of Chapter 3 that immovable subjects are generally possible for non-literal *sit*, and from my analysis in §2.3.3 that immovability of a subject referent can result in an aspectual mismatch if the sentence has progressive aspect. In Table 4.5, the immovable subject type is listed in the highlighted row (e) and is represented by a castle icon.

Naturally-occurring examples can be seen in (42). The subjects are boldfaced in these sentences, and a grammaticality judgement is included in each.

- (42) *Naturally-occurring examples of castle-type subjects*
- a. **The castle** sits \*(on a 100 m hill) overlooking the River Moselle.[g]
- b. There are also lots of hiking trails around **Ucluelet**, which sits \*(about 30 minutes south of Tofino).[g]
- c. **Mount Baker** sits \*(at the very north of Washington state) [...]. [g]
- d. **This [lake]** sits \*(in the middle of Gambier Island) [...] and it takes quite the effort to get there. [g]

TABLE 4.5: Subject types and uses of *sit*

Type	Selectional features	Use
a. 	[ + concrete, + animate, + butt, + moveable ]	literal
b. 	[ + concrete, - animate, - butt, + moveable ]	non-literal
c. 	[ + concrete, + animate, - butt, + moveable ]	non-literal
d. 	[ + concrete, - animate, + butt, + moveable ]	non-literal
e. 	[ + concrete, - animate, ± butt, - moveable ]	non-literal

For all four sentences, the postverbal component is necessary for well-formedness. The corpus study data (§3.1.3/§3.2.3) show it is less common, but still possible to find postverbal adjectives with immovable subjects. Similarly, a postverbal adjective did not appear in the Google searches. Examples from Corpus Study II are in (43), where the adjective is boldfaced and a grammaticality judgement is included in each.

(43) *Immovable subjects with postverbal adjectives*

- a. The sunny room sat **\*(untouched)** [ . . . ]
- b. “This house was sitting **\*(vacant | on the side of the road)** [ . . . ]”

[ Adapted from COCA ]

In the naturally-occurring examples of (43), the adjective’s content concerns disuse. In the corpus studies of Chapter 3, we saw that the adjectives appearing after *sit* often had similar content highlighting the ‘idle’ state of the subject referent. Additionally, as is shown in (43), postverbal material is required, regardless of the category. This parallels what we have seen for the other subject types of non-literal *sit*.

The subjects in (42)–(43) can all be described as immovable. Castles, cities, mountains, lakes, and houses are difficult, if not impossible, to move from their locations. Typically, the only way to “remove” them is to destroy them. This criterion means that very large statues, such as the Statue of Liberty, boldfaced in (44), belong in the castle-type category rather than the balloon-dog-type category.

(44) Presented to America by the people of France in 1886, **the statue** sits on 12-acre Liberty Island in New York Harbor.<sup>[g]</sup>

In Google searches to find the examples for this subsection, the sentences uniformly contained simple present *sits*. As can be seen in (45), the progressive aspect with these examples is infelicitous.

- (45) *Incompatibility of the progressive and immoveable subject types*
- a. ??The castle is sitting on a 100m hill overlooking the Mosel River.
  - b. ??Uculet is sitting about 30 minutes south of Tofino.
  - c. ??Mount Baker is sitting at the very north of Washington state.
  - d. ??This lake is sitting in the middle of Gambier Island.

In all the sentence of (45), it is odd to use the progressive. For these sentences to be well-formed, there would have to be a context where either the subject referent is understood to have moved recently/will move soon.<sup>16</sup> For example, when a house is exceptionally derelict or flimsy and a hurricane is approaching. We will see below that the progressive is not ill-formed when there is an evaluative inference concerning the subject's state at the reference interval.

The infelicity of the examples in (45) patterns with what was introduced in §2.3.3, that, unlike other stative verbs, posture verbs can be used in the progressive (Maienborn, 2005; De Wit & Brisard, 2014; Anthonissen et al., 2016)—except when the subject is immoveable (Dowty, 1979). Examples with *sit* can be seen in (46).

- (46) *Immoveable subjects and the progressive: Constructed examples*
- a. Your glass is **sitting** near the edge of the table. MOVEABLE SUBJECT
  - b. ??John's house **is sitting** at the top of the hill. IMMOVEABLE SUBJECT

[ Dowty 1979, p. 174 ]

Even though the sentences in (45) and (46-b) are semantically odd, it is possible to find sentences with the progressive, even in the corpus study sentences. Examples from Corpus Study I in §3.1 are in (47) below.<sup>17</sup>

- (47) *Immoveable subjects and the progressive: Corpus examples*
- a. There was no foundation – the house **was sitting** on rocks.
  - b. “[An 1880s farmhouse that the speaker renovated] **was sitting** vacant on the side of the road when I first saw it,” [ . . . ]

[ COCA ]

The subject of the sentence in (46-b) and those in (47) are a house. The sentences in (47) are not just naturally-occurring, but they also contain more context. I discuss this context, and its effect below, but first show more examples in (48) from a Google search with other immoveable subject referents. That is, I demonstrate that the counterexamples are not limited to houses only.

<sup>16</sup>Dowty (1979) also notes the possibility of contexts where an observer is the one moving, although his examples describe observers of smaller objects, such as statues in gardens. Possibly when the observer has an aerial view, a similar effect is achievable, but it is incompatible with my native speaker intuitions.

<sup>17</sup>The sentence in (47-b) is the original version of the adapted one in (43).

(48) *Immoveable subjects in the progressive*

- a. The beautiful **city of Vancouver** is sitting on one of the most dangerous geographic location [sic] [...] [g]
- b. [...] on a tight site is an understatement. Standing 59 stories tall **this building** is sitting on a postage stamp size of property at the corner of Bay and Adelaide Streets. [g]
- c. So if **your house** is sitting in the shadow of a sky-scraper or was built next door to a colosseum, you might need to find a new home before going solar! [g]

The subjects of the sentences in (48) are a city in (48-a), a building in (48-b), and a house in (48-c). There is no indication in the surrounding context that any of these subjects have been moved, or will be moved. In line with other work on the progressive in Modern English (De Wit et al., 2013; De Wit & Brisard, 2014), I have proposed in past work that an evaluation licences this otherwise incompatible combination (Fraser, 2018). Stative progressives with such an evaluation have been said to describe a situation that “could not have been particularly expected or predicted” (DeWit & Brisard 2014: 62). The naturally-occurring sentence in (49) illustrates.

(49) Yet professors want the students be [sic] believe **they are understanding hip-hop** because they have a book in front of them. [g]

The stative verb in (49) is *understand*, and it is in a sentence describing an attempt by some professors, who are presumably not hip-hop listeners, to show their students solidarity with respect to the music. There is an evaluation of this understanding-hip-hop state, i.e., the speaker evaluates this state as unbelievable or unexpected, and it is argued that the use of the progressive signals such an evaluation.

In past work (Fraser, 2018), I have shown that something similar can also be seen with non-literal *sit*, in particular with immoveable subjects. My account of non-literal *sit* with the progressive and immoveable subject referents is similar to accounts analysing the progressive with stative verbs such as *understand*, in that there is an evaluation licensing the otherwise infelicitous combination. It differs, however, in the content of the evaluative inference.<sup>18</sup> An example with two different contexts can be seen in (50).

(50) *Immoveable subjects, the progressive, and an evaluation*

- a. {A guide is pointing out landmarks of Vitoria-Gasteiz:} NEUTRAL  
The new cathedral {sits|#is sitting} in the park.
- b. {Many people in Vitoria-Gasteiz don't like the aesthetics of the new cathedral.  
Namely, it was built in the gothic style—but in the 20th century. A local says

<sup>18</sup>In §2.3.3, I discussed the differences between interval statives and statives like *understand*. It is possible that the difference in evaluation content is due to this temporal difference. However, as noted for the evaluation more generally, an investigation of this is reserved for future work.

to a friend:}

EVALUATIVE

The new cathedral {sits|is sitting} in the park.

In the neutral context of (50-a), the tour guide indicates, possibly when looking at a map, where different landmarks of the town are located, and it would be infelicitous to use progressive *sit*. In contrast, in the evaluative context of (50-b), the speaker has made it clear that there is an evaluation of the cathedral; in this case, progressive *sit* is felicitous. The evaluation in (50-b) concerns the cathedral's existence, although sometimes it can be about the location of the subject. This latter type is what we saw for the sentences of (48), repeated in (51) with the material that is indicative of an evaluation in boldface.

(51) *Evaluations of immoveable subjects in the progressive*

- a. The beautiful city of Vancouver is sitting on one of the **most dangerous geographic locations** [ . . . ]
- b. on a tight site is an understatement. Standing 59 stories tall this building is sitting on a **postage stamp size of property** [ . . . ]
- c. So if your house is sitting **in the shadow of** a sky-scraper or was built next door to a colosseum, **you might need to find a new home** before going solar!

In (51-a), the evaluation concerns the city's precarious location on the San Andreas Fault: it is expected that at any moment a momentous earthquake may happen; the location of the city is therefore dangerous. In (51-b), the evaluation concerns the building's location on a tiny property, and the speaker connects the small size of the location with the very tall height of the building. In (51-c), where the context is about installing solar panels on one's home, the evaluation concerns the location of a house with respect to the amount of sun it may or may not be able to receive. If one is planning to install solar panels, a shady location is undesirable. As noted in the presentation of Corpus Study I in §3.1.1, however, this inference has been thus far elusive, and remains difficult to pin down systematically. Future work could examine it in more detail, with extended contexts for examples and controlled conditions for surveys. In this thesis, the main research goals concern the details of *sit*'s synchronic picture and diachronic trajectory, and this inference with one specific subject type in combination with the progressive falls outside of those goals. Therefore, I leave further discussion aside.

A last empirical diagnostic for the castle-type subjects is the inference pattern targeted in the previous subsections. However, it is not conceivable that this type of entity moves, and unsurprisingly a continuation targeting this does give an infelicitous interpretation. This is shown in (52).

(52) **Cochem castle** sat on the hill for years. #During that time, it changed locations.

As expected, an immoveable subject is infelicitously interpreted as having moved from its location. This subject type patterns like the others, in not allowing cancellation of the



lack-of-movement meaning. Let us look at the ‘idle’ inference now, in (53).

- (53) After the last of the royal family left, **the castle** sat on the hill for years.
- a. During that time it became dilapidated. IDLE
  - b. #During that time the municipality converted it into a museum, which is regularly visited. ACTIVE

The same-speaker continuation in (53-a) describes the castle not being in use during the reference interval, and this continuation is felicitous. In contrast, the continuation in (53-b) describes a change of the castle not being used, to being used during the reference interval; this continuation is infelicitous. The examples in (53) suggest that the ‘idle’ inference is strongly present for the castle subject type, similar to the other non-literal subject types. However, there are multiple examples in this subsection alone which appear to contradict an ‘idle’ interpretation. Three of the sentences from (42) are adapted with continuations in (54).

- (54) *Castle-type subjects which are not necessarily idle*
- a. **The castle** sits on a 100 m hill overlooking the River Moselle. The royal family still lives there.
  - b. **Ucluelet** sits about 30 minutes south of Tofino. It has a population of about 1.500.
  - c. **Mount Baker** sits at the very north of Washington state. It is a very popular climbing destination.

In the three sentences of (54), the subject referents are stationary, but in use in some way: the castle in (54-a) and the town Ucluelet in (54-b) have people living in them, and the mountain has people climbing it. It remains unclear whether the type of use described in the sentences of (54) is parallel to the passive use of the devices in §4.1.1: in the discussion of the latter, I claimed that the devices can combine with *sit* when no external participant is actively interacting with the subject referent. In the sentences in (54), many external participants are interacting with the subject referents; the interaction could be argued to be overall unchanging, similar to somebody watching television, or a computer running an update in the background. This data suggest two possibilities: the ‘idle’ inference is not uniformly encoded for all subject types, and/or that the ‘idle’ inference contributes meaning that the subject referent is overall unchanged during the reference interval.

Another possibility for the felicity of the continuations in (54), but not in (53-b), is that only the latter contains an extended temporal interval. If the temporal PP is replaced by something else, such as *impressively*, the continuation is felicitous. This is shown in (55), with the adverbial boldfaced.

- (55) After the last of the royal family left, the castle sat on the hill **impressively**. The municipality converted it into a museum, which is regularly visited.







In (55), the formerly infelicitous continuation is no longer odd. This data is interesting because it suggests that for many subject types, non-literal *sit* is consistently associated with the ‘idle’ inference; while for the castle-type subject, this inference still needs contextual support. Another way to understand this difference among subject types is that the change from literal to non-literal *sit* is still a change in progress, and the immovable subject type with this interval stative is the last to participate in the change. The complexity of the ‘idle’ inference’s meaning status is revisited in §4.2, and its role in *sit*’s diachronic change is accounted for in Chapter 7.

In summary, the most common postverbal category of these immovable types is a location, although solo adjectives are also possible. These subject types are different from the other ones, because they are incompatible with the progressive aspect; the other subject types can appear interchangeably with simple and progressive aspectual forms. The ‘stationary’ inference patterns consistently with the other non-literal subject types, but while the ‘idle’ inference is possible with this subject type, there are many counterexamples. The castle-type subject marks the end of the concrete possibilities for non-literal *sit*. The next subsection discusses abstract subjects.

#### 4.1.5 Emotions and ideas

Now that the concrete subject types have been addressed, we can turn to the abstract ones, such as emotions and thoughts. As a reminder from the discussion in the introduction to this section, I disregard lyrical uses, as they are not transparent/compositional. In Table 4.6, the abstract subject type is displayed in row (f), the final row of the table.

TABLE 4.6: Subject types and uses of *sit* (final)

	type	selectional features	use
a.		[ + concrete, + animate, + butt, + moveable ]	literal
b.		[ + concrete, - animate, - butt, + moveable ]	non-literal
c.		[ + concrete, + animate, - butt, + moveable ]	non-literal
d.		[ + concrete, - animate, + butt, + moveable ]	non-literal
e.		[ + concrete, - animate, ± butt, - moveable ]	non-literal
f.		[ - concrete ]	non-literal

As seen in Table 4.6, this subject type is missing the features present for the others. Namely, abstract subjects cannot be judged as having any anatomy or being sentient. Moveability is possible to conceive, as we will see in the examples targeting the ‘lack of

movement' inference below. For the phenomenon under investigation, I assume that a [- concrete ] feature blocks the other features.

The sentences in (56) provide naturally-occurring examples. As with the other types, the subject is boldfaced in each.

- (56) a. Amazingly, considering the eventual value of his invention, Luckey was also posting detailed reports about his work to a 3-D gaming message board. **The idea** was sitting there for anyone to steal.<sup>[g]</sup>
- b. Well the season is over and the last of the Christmas leftovers are being digested, some much needed perspective has finally settled into the spot where **disappointment and heartache** sat just six days ago.<sup>[g]</sup>
- c. I was completely devastated by how unfair and inexplicable it was that a person should die at thirteen. So I thought I would do something about it. I didn't learn biology until years later, but **the thought** was sitting there in the back of my brain the whole time.<sup>[g]</sup>

The subject referents of the sentences in (56) are a thought, disappointment and heartache, and an idea. In (56-a), the subject is written-up details for a game, Oculus Rift, which are described by the writer as ideas with the potential to be stolen by anybody reading the forum. In (56-b), the subjects are two emotions, disappointment and heartache. They are described as having occupied some spot, possibly in the body, where perspective is now moving in. In (56-c), the subject is a thought about learning biology, described as being located in the speaker's brain.

A location or other postverbal component is required for these abstract subjects, just as it is for all other non-literal subject types. This is illustrated in (57), with adapted versions of the sentences in (56).

- (57) a. The idea was sitting \*(available for anyone|there).
- b. Disappointment and heartache sat \*(heavy|in their stomachs).
- c. The thought was sitting \*(half-baked|there in the back of my brain).

Finally, we will determine whether the inference pattern of non-literal *sit* is constant across the subject types. The example in (58) contains continuations targeting movement and lack of movement.

- (58) The thought was sitting in the back of my brain for months.
- a. During that time it was always there, a painful reminder. NO MOVEMENT
- b. #During that time it came and went. MOVEMENT

The content of the continuations attempts to target whether or not the entity, the subject of *sit*, has moved from its location during the eventuality. With an abstract subject, the inference is more difficult to conceptualise than with the concrete subjects, but it is still

possible to see that it is not cancellable in a continuation, as is shown in (59).<sup>19</sup>

- (59) The thought was sitting in the back of my brain for months.
- a. During that time I often forgot about it. IDLE
  - b. #During that time I often developed it further. ACTIVE

With the abstract subject type, we have covered the entire typology. In the next subsection, the typology is discussed, including how to account for a potential counterexample.

#### 4.1.6 Discussion

Even though the accounts presented in §2.3 describe non-literal uses of *sit* as combining with artefact subjects, I observed a variety of subject types in corpus examples in Chapter 3. In the present section I have motivated a systematic typology of subject types which combine with literal and non-literal uses of *sit* and which go beyond artefacts only. Based on the anatomical characteristics and other observations about moveability discussed in Chapter 2, I submitted four features that the subjects can have and the consequences of the configuration of features. The subjects of the literal use of *sit* are necessarily [+animate, +butt]; the features [+moveable, +concrete] follow from the first two. In the literal use, the subject is agentive, a postverbal location or adjective is optional, and the subject is described as not moving from their overall location during the reference interval.

The three other permutations of [ $\pm$ animate,  $\pm$ butt] are seen only with the non-literal use, where [-animate, -butt] is the most common type: artefacts and natural entities, or the cup type. This cup type, being the most common, has no extra restrictions or preferences. The combination [+animate, -butt] is called the whale type, and the postverbal category of this type is more likely to be an adjective whose content draws salience from the posture verb.<sup>20</sup> The combination [-animate, +butt], the balloon-dog type, cannot combine easily with a location that is a sitting apparatus. Any combination with the feature [-moveable] necessarily has the features [-animate, +concrete], while either [+butt] or [-butt] are possible. This subject type, the castle type, more often combines with a location, although solo adjectives are also possible. Unlike the other subject types, this castle type cannot combine with progressive *sit*, unless there is an evaluation. Finally, the [-concrete] feature, the heartbreak type, represents the abstract subjects which can appear with *sit*. Due to the nature of the subject, it is not as simple to access the inference that the subject is stationary, but it is still present. Regardless of these minor differences, all of these non-literal uses require a postverbal category, the subject is a theme, and this subject is not moved from its location during the reference interval. There is an additional ‘idle’ inference which is different from the ‘stationary’ inference, and is strongly present with the non-literal use of *sit*. The data discussed for each subject type suggest that the ‘idle’ inference concerns not only activity, such as a computer which is on, but

<sup>19</sup>While it is possible to conceptualise a situation where a negative emotion, like a grievance, was nursed to during the sitting interval, I am unable to construct a *sit* example or find one online.

<sup>20</sup>See §7.1 on a more explicit definition concerning “draws salience”.

clearly non-passive use, such as a computer which has a user actively interacting with it. In addition, data from castle-type *sit* sentences presented challenges to the inference's generalisation. The inference's complexity is addressed in §4.2.

A possible limitation of employing a closed set of features to the subject types is that some entities might be overlooked. One example involves a human subject referent who has the features [+sentient, +butt]; such uses were introduced in §2.1.1. Interestingly, these uses do not carry an interpretation where the subject referent is entailed to be in a sitting position; they are rather interpreted as being idle. I call them in this thesis "idle human" uses. An example is shown in (60), with continuations first targeting the 'stationary' inference. As a reminder, the lack of movement is with respect to the overall location of the house, not some sitting apparatus.

- (60) Phil sat idle in his house for days.
- a. ... During that time he paced around the house a lot.
  - b. ... #During that time he went outside several times.

In (60), Phil is described to be located within his home for a long period of time, there is a postverbal adjective, *idle*, underlining inactivity, and a temporal phrase describing the reference interval to be long. Unless he is disabled and living in a wheelchair, it is difficult to imagine that Phil was in a sitting position the entire reference interval. In fact, in the continuation in (60-a), it is shown that he was not necessarily in a sitting position the entire reference interval. This suggests that the use of *sit* is non-literal. In the second continuation in (60-b), it is infelicitous to describe Phil as having left the overall location, his house, during the reference interval. This matches the data seen above, in that *sit* uniformly carries a 'stationary' inference.

A confounding piece of data is seen in (61). It was first introduced in Chapter 2, and supported by the synchronic corpus data reported in Chapter 3 and the constructed data in the preceding subsections §4.1.1–4.1.5, that if (60) is indeed a non-literal use of *sit*, it would be expected that postverbal material is needed. In (61), we see that it is possible to have a well-formed *sit* sentence without either a postverbal adjective, location, or temporal phrase.

- (61) Phil sat (idle) (in his house) (for days).

Even though (61) demonstrates that a well-formed sentence is possible without postverbal material, it is important to note that such a bare sentence is then a literal use of *sit*. Namely, Phil is entailed to be in a sitting position. The structural difference between the example in (60)–(61) and the other non-literal uses of *sit* suggests that they are not exactly alike.

I propose here that human subject referents with *sit* can be interpreted like a non-literal use, where they are not necessarily in a sitting position, only when the utterance is accompanied by an 'idle' inference. In (60)–(61), this inference is provided by the content of *idle* or by the pragmatics of *for days*, where the hearer understand that sitting positions

are not typically maintained for more than a few hours, much less days. An attempted counterexample to this claim is seen in (62), where it is infelicitous to include a modifying phrase encoding activity or productivity.<sup>21</sup>

(62) Phil sat (#active|#productive) in his house for days.

The ‘idle’ inference is similar to the one targeted throughout §4.1.1–4.1.5, but the denotation of *sit* in (60) is not the same as the denotation of *sit* in those real non-literal uses. As I argue in the next section, §4.2, the ‘idle’ inference accompanies non-literal *sit* only. For literal *sit*, this inference can arise, but only when the context or other lexical material makes it possible. The examples above suggest that there are even some utterances where the ‘idle’ inference becomes more salient than the posture entailment itself. In Chapter 7, I propose a diachronic analysis of *sit* arguing that the onset of the transition from literal to non-literal *sit* hinges on idle-human contexts where the posture entailment lost its salience.

Another example which does not fit neatly into the typology was discussed in past work (Fraser, 2016, 2018). The subject referent is an unborn baby, and an example is in (63).

(63) #The baby was sitting {unborn|in her uterus}.

The subject of (63) is a fetus, a concrete entity. Depending on the stage of its development it has the appropriate sitting anatomy; for the purposes of this discussion, I will assume it has the feature [+butt]. Based on the expectation that the fetus will eventually leave the uterus, either by being born naturally or by surgery, I would also assume that it has the feature [+moveable]. In addition, the fetus is [+animate] placing such a subject into the literal dog-type category. That being said, there is no sitting apparatus present, nor is there a horizontal surface forcing a sitting interpretation, so the infelicity is not explainable by the typology.

It is possible that the infelicity stems from a combination of a fetus always being in a position resembling a sitting-like position due to its location during development, and that it cannot leave to move elsewhere, except for the one big exit. Interestingly, a sentence like (63) can be felicitous when there is a clear evaluation in the context, such as in (64).

(64) After feeling that something is wrong, Lucy went to her obstetrician. Unfortunately, they couldn’t find a heartbeat, and it looked like the baby had died.  
The fetus was sitting {unborn|in her uterus}.

The evaluative context for (64), while unpleasant, allows a sentence like (63) to be felicitous. The *sit* sentence in (64) describes the subject as not moving within or from the location. It is possible to understand the evaluation as targeting the location of the

<sup>21</sup>Compare the literal use’s ability to combine with ‘productive’ contexts, as in (i).

(i) Phil sat **productive** at his desk. He completed his essay after a few hours.

unborn fetus as being undesired, but, as this concerns a miscarriage, not, e.g., a long or necessarily uncomfortable pregnancy, it is more likely that the evaluation targets the dead state of the fetus, and this state is unwanted. In this case, the evaluation is similar to what we saw for castle-type subjects in §4.1.4. Although a subject such as an unborn baby is very rare, it is still able to combine with non-literal *sit*, and the combination patterns like one of the existing subject types.

The fetus example demonstrates the limitations of the subject features proposed here. That is, if the evaluative context in (64) stated that the baby was sick, but still alive, the [+animate] feature would be applicable. If we continue to assume that it is similar to the castle type, the subject is then [+animate, +butt, -moveable, +concrete], giving us a new type not seen in the previous subsections. That being said, this subject is much rarer than the types presented here, to the point where it is near impossible to find naturally-occurring examples.

With these potential counterexamples, the subject type section is concluded. In the next section, we investigate the two inferences targeted throughout this section: the ‘stationary’ and the ‘idle’ inferences.

## 4.2 Meaning components across the literal/non-literal divide

In this section, I diagnose the meaning status of the inferences targeted throughout the previous section. Introduced in §2.3.3, these inferences encode the meanings ‘figure does not move from ground’ and ‘figure is idle’ and are called the ‘stationary’ and ‘idle’ inferences, respectively. Importantly, these inferences are not the same. Examples of each are provided below, beginning in (65) with the ‘stationary’ inference and same-speaker cancellation targeting the content of the inferences.

### (65) ‘Stationary’ inference

- |    |   |             |
|----|---|-------------|
| a. | Phil sat on the sofa for a half hour. . .                                 | LITERAL     |
|    | #He periodically got up and sat back down during those thirty minutes.    |             |
| b. | <i>The Banja Luka Weekly</i> sat on the sofa for a half hour. . .         | NON-LITERAL |
|    | #I periodically picked it up and replaced it during those thirty minutes. |             |

In the literal sentence in (65-a), the referent of *Phil* is understood to be located on a sofa for a thirty-minute interval. The infelicitous continuation additionally suggests that this referent did not move from the sofa for the duration of the interval.<sup>22</sup> In §2.3.3, I

<sup>22</sup>In addition to vertical movement, a horizontal movement would be infelicitous. This is illustrated in (i) for both uses.

### (i) ‘Stationary’ inference applicable across both axes

- |    |   |             |
|----|---|-------------|
| a. | Phil sat on the sofa for a half hour. . .                             | LITERAL     |
|    | #He slid across the cushions during those thirty minutes.             |             |
| b. | <i>The Banja Luka Weekly</i> sat on the sofa for a half hour. . .     | NON-LITERAL |
|    | #I zoomed it across the cushions like a car for those thirty minutes. |             |

showed that the essential parts, i.e., the butt for *sit*, of the figure must not move from the ground, in order for the literal *sit* sentence to be felicitous. Similarly, in the non-literal sentence in (65-b), the newspaper referent is located on the sofa for thirty minutes, and the infelicitous continuation suggests that it was not moved from the sofa, the ground, during the sitting eventuality; it is possible for a non-essential part, such as the pages, to have moved, as long as the newspaper did not change location. Throughout §4.1, I used a same-speaker cancellation similar to the one in (65) for each of the subject types, demonstrating the inference's uniformity in both the literal and non-literal uses. Besides these similarities, one difference stands out: the referent in the literal use in (65-a) is able to move itself into and out of the sitting position, while the referent in the non-literal use in (65-b) is not.<sup>23</sup> This difference in autonomy reflects the difference in posture being predicated or not. Because the 'stationary' inference is consistently found for both the literal and non-literal uses of *sit*, I have been calling this inference a "core meaning component". In this section, I show that this core meaning component is in fact an entailment of *sit*, found in both the literal and non-literal uses.

Unlike the 'stationary' inference, the 'idle' inference accompanies the non-literal use only. Examples demonstrating this are in (66), where the inference is targeted with same-speaker cancellations.

(66) *'Idle' inference*

- |    |   |             |
|----|---|-------------|
| a. | Phil sat on the sofa for a half hour. . .                           | LITERAL     |
|    | During that time he was on the phone with Jim.                      |             |
| b. | <i>The Banja Luka Weekly</i> sat on the desk for half an hour . . . | NON-LITERAL |
|    | #During that time I read some pages.                                |             |

In the literal sentence in (66-a), Phil is described as being in a sitting position, and this description is compatible with him engaging in other activities. That is, as long as Phil does not change his overall location, he can be active or idle. As such, I argue that the 'idle' inference does not accompany the literal use by default; of course, if the sentence contained a postverbal adjective like *idle*, then Phil would have the property of being idle during the reference interval,<sup>24</sup> but then that meaning is contributed by the adjective, not *sit* (s. the discussion about "idle humans" in §4.1.6).

The non-literal use in (66-b) demonstrates a different inference pattern. Namely, it is infelicitous to describe the book with *sit* and simultaneously as being used during the reference interval.<sup>25</sup> Throughout §4.1, I used a same-speaker cancellation similar to the one in (66) for each of the subject types, demonstrating that it is present with non-literal

<sup>23</sup>Sentient subject referents of the non-literal use, identified as the whale-type subjects in §4.1.2 and idle humans in §4.1.6, are capable of autonomous movement. As was shown in the discussion of each, the autonomous movement excludes transitioning into or out of a sitting position.

<sup>24</sup>In §5.4, I motivate an analysis of postverbal adjectives in the literal use as depictive predicates. One feature of these secondary predicates is that their property holds throughout the reference interval.

<sup>25</sup>I used a salient activity that is compatible with the stationary entailment. For a newspaper referent for example, I chose a reading activity instead of, e.g., a moving or carrying activity; it is also possible to imagine, e.g., a filling-in-a-crossword activity in the continuation. See Pustejovsky (1995) for a theory involving different aspects of an object's meaning, including the function of an object or its "telic quale".



*sit*. We saw already in that section that the ‘idle’ inference is not only separate from the ‘stationary’ one, but also more complex. Namely, the ‘idle’ inference can contribute different senses of ‘inactivity’ (cp. Newman 2002 and the label “non-activity *sit*” described in §2.3.3), including a specific, non-interactive, kind of inactivity. For example, a computer can be on, running, and still combine with non-literal *sit*, as long as an external participant is not, e.g., playing a game on it or surfing the web; this was discussed in the cup-type subjects of §4.1.1. Another example concerns the sentient whale-type subjects of §4.1.2: they are, by definition, alive, but can combine with non-literal *sit* as long they are not somehow interacting with something else. There is also the challenging data of the castle-type subject from §4.1.4: naturally-occurring examples are easy to find with non-literal *sit* and where there are clearly people living in the castle or town. I noted in that section that either the ‘idle’ inference appears with extended temporal intervals, or it is compatible with homogeneous states such as living. Finally, there is the empirical generalisation that *idle* often appears as a postverbal adjective with non-literal *sit*. This could suggest that the meaning needs to be explicit, just like for the literal use of *sit*. Instead, I assume here that with the non-literal use, that *idle* adjectives re-enforce the inference. This additionally highlights the meaning component’s subtlety: entailments cannot be re-enforced, but conversational implicatures can.

In the analysis below, we will see that the ‘idle’ inference is not-at-issue; while I assume the ‘idle’ inference is some sort of conversational implicature, for the purposes of this thesis the most relevant takeaway is that the inference is not-at-issue. In the diachronic proposal in Chapter 7, I argue that this not-at-issue inference is a crucial feature in the diachronic trajectory of *sit* from its posture-encoding literal use to its non-posture-encoding non-literal use.

So far in this thesis, I have often used same-speaker cancellation to target each of the inferences. This sort of cancellation is known to be able to target meaning which is consistently, or “conventionally”, encoded, although a same-speaker cancellation does not differentiate between meaning types such as entailment and conventional implicature. In addition, even if an inference is consistently present with an expression, it would be short-sighted to conclude from this single test that the inference is conventionally encoded. For this reason, this section utilises other diagnostics to supplement the same-speaker cancellation.

The following discussion begins with a brief theoretical background. Then, I move on to the diagnoses of the inferences accompanying *sit*. First and foremost, I assume in this thesis that meaning is multi-dimensional. The regular semantic content describing an expression’s denotation is the AT-ISSUE meaning of that expression; this meaning is akin to Gricean “what is said” and it can be informally characterised as the main point or central message of the utterance.<sup>26</sup> There is additional content, known as NOT-AT-ISSUE or SECONDARY meaning, which is not the main point of the utterance.<sup>27</sup> A number

<sup>26</sup>It is also sometimes called the “literal” meaning, as was described in §2.1.1.

<sup>27</sup>Although these are sometimes understood as two distinct meaning types, recent research has demonstrated that the divide might in fact be a continuum (Tonhauser et al., 2018). Similarly, the exact definition of “at-issueness” is debatable (Koev, 2018).

of diagnostics have been proposed to pinpoint characteristics of meaning types, with the ultimate goal of delimiting a taxonomy (Potts, 2005, 2015; Simons et al., 2010; Tonhauser, 2012; Beaver et al., 2017; Tonhauser, 2020; Rett, 2021a,b). In this section, I use such diagnostics to identify the meaning type of the inferences described above. Following Simons et al. (2010), I assume here that at-issue content is a relevant answer to the Question Under Discussion (QUD; Roberts 1996/2012; Ginzburg 2012), while not-at-issue content is peripheral. For (67), we can imagine a context with the salient individual Phil, a soccer player; there are two speakers.<sup>28</sup>

(67) *At-issue answers the relevant QUD*

- a. What position does Phil play?
- b. He's the **damn** striker.

In (67-a), the first speaker asks about Phil's soccer playing. The second speaker in (67-b) answers that question, and the main message of that answer is that Phil plays the striker position. This is the at-issue content. In addition to this message, the speaker in (67-b) contributes peripheral information with *damn*. This item contributes emotive meaning to the at-issue content contributed by the speaker, but the emotive meaning does not answer the QUD.

A standard diagnosis for determining whether or not content is at-issue is DENIAL: if the content is the main point of an utterance, it can be targeted by a second speaker's denial. Not-at-issue content, on the other hand, cannot be targeted, and such a denial is infelicitous. This is illustrated in (68)–(69) for the at-issue and not-at-issue content from the sentence in (67).<sup>29</sup> In (68), the context includes the salient individual Phil, who is a soccer player. The targeted inference is represented with  $\phi$  in both sentences; for both, Alan in (a) and Bob in (b) are the speakers.

(68)  $\phi$ : *'Phil plays the position of striker.'*

- a. Phil is the **damn** striker.  $\phi$
- b. That's not true, he is the goalie.  $\neg\phi$

(69)  $\phi$ : *'The speaker has a negative attitude towards Phil/his position.'*

<sup>28</sup>In (67), there is an explicit QUD, although in many conversations, the QUD remains implicit; in §7.2.2, I discuss how implicit QUDs can be reconstructed.

<sup>29</sup>Although I am using *damn* to illustrate the diagnostics, I do not assume that not-at-issue content is inherently emotive. There are many other types of not-at-issue-contributing expressions. One example is in (i), with the German modal particle *ja*.

- (i) Morgen ist die Uni ja zu.  
tomorrow is the university PART closed  
'(As you may know), the university is closed tomorrow.' GERMAN

[ Gutzmann & Turgay 2019, p. 8 ]

The modal particle in (i) contributes the meaning that the content of the utterance may be known by the addressee, but, crucially, this meaning is not the main point of the utterance (Jacobs, 1991; Kratzer, 1999; Zimmerman, 2004). In a context where the addressee is unaware of the university schedule, the additional of *ja* would be infelicitous.

- |    |                                  |            |
|----|----------------------------------|------------|
| a. | Phil is the <b>damn</b> striker. | $\phi$     |
| b. | #That's not true, Phil is great! | $\neg\phi$ |

In the case of the inference in (69), the second-speaker denial of  $\phi$  is felicitous, suggesting the inference is at-issue. In contrast, when the test is applied to the inference like in (68), the second-speaker denial of  $\phi$  is infelicitous.

The sentences in (70)–(71) illustrate the denial diagnostic for the ‘stationary’ inference in the two uses of *sit*. It is expected that both the literal and non-literal use patterns the same, as this inference has appeared to be uniform thus far. Like in (68)–(69), the targeted content  $\phi$  is denied by a second speaker. For the ‘stationary’ inference, the targeted content,  $\phi$  is ‘the referent of the subject is overall not moving’. The context includes a salient individual, Phil, and a copy of a detective novel in (71); for both, Alan in (a) and Bob in (b) are describing scenes from their life together.

- |      |   |             |
|------|---|-------------|
| (70) | $\phi$ : ‘ <i>Phil is not moving.</i> ’                         | LITERAL     |
| a.   | Phil <b>sat</b> on the sofa for a half hour.                    | $\phi$      |
| b.   | That's not true, he was jumping up and down on the sofa.        | $\neg\phi$  |
| (71) | $\phi$ : ‘ <i>The book is not moving.</i> ’                     | NON-LITERAL |
| a.   | <i>Selbs Betrug</i> <b>sat</b> on the sofa for a week.          | $\phi$      |
| b.   | That's not true, I returned it to the library during that time. | $\neg\phi$  |

In both (70-b)/(71-b) Bob's response felicitously denies  $\phi$ . For the literal use of *sit* in (70), Bob's continuation states that the referent of *Phil* is jumping up and down on the sofa, denying that he was stationary. For the non-literal use of *sit* in (70), Bob's continuation states that the book has been moved from the sofa, even from the house, denying a state of no motion. These denials are felicitous, indicating, as predicted, that  $\phi$  are at-issue. Based on this data, I propose that the lexicon entries for both the literal and the non-literal uses comprise the ‘stationary’ inference, an inference which is in fact an entailment.

Now that the ‘stationary’ inference has been diagnosed as an entailment, we turn to examining the ‘idle’ inference, which is more complex. The inference contributes the meaning that the referent of the subject is ‘not in use’ or ‘idle’. It was first identified as “non-activity sit” in Newman (2002, p. 18), which I discussed in §2.3.3. Then, in §4.1 I targeted the inference for each subject type with same-speaker cancellations, and showed that the inference is strongly present. In addition, the inference can be contradicted by active use of the subject referent, but not by unchanging use; compare a computer updating itself and a user performing the commands so that the computer updates itself, as shown in §4.1.1. Let us see now how this inference performs in the denial test.

Like with the other tests above, I refer to the ‘idle’ inference's content with  $\phi$  in (72), and the (a)/(b) sentences are representative of two speakers, Alan and Bob. For (72), the context includes a bar where there are often newspapers made available to the customers.

- (72)  $\phi$ : ‘The newspaper is not being actively used.’
- a. *The Banja Luka Weekly* is sitting on the bar.  $\phi$
- b. #That’s not true! I am reading stories on the front page.  $\neg\phi$

As can be seen in (72), a direct denial of Alan’s statement by Bob is odd, similar to the infelicity of *damn* in (69). This suggests that the ‘idle’ inference is not-at-issue, and we will now try to confirm this suggestion.

A commonly attested property of not-at-issue content is PROJECTIVITY (Langendoen & Savin, 1971).<sup>30</sup> When a meaning type has this property, the inference is understood to be a commitment of the speaker, regardless of whether it is embedded under semantic operators. If the ‘idle’ inference is projective, this would mean that non-literal *sit* is consistently associated with the inference, across many contexts. An example with negation, a key member of the “family of sentences”, i.e., embeddings under a closed set of semantic operators (Chierchia & McConnell-Ginet, 1990; Tonhauser, 2012), is shown in (73) with *quit*; the prediction is that if the inference contributed by *quit* is projective, it is incompatible with the context in both the plain assertion and the negated sentence. The inference of *quit* in (73) is ‘Phil played football in the past’; note that this is not an exchange and each sentence is uttered by the same speaker.

- (73) [ Context: Phil never played football. ]
- a. #Phil **quit** playing football.
- b. #Phil did not **quit** playing football.

Considering the context that Phil never played football and that the meaning contributed by *quit* is contradicted by the context, the plain assertion in (73-a) is infelicitous. With that same context, but under negation, *quit* is still infelicitous, indicating that the inference is projective. In (74), the projectivity of the ‘idle’ inference is tested.

- (74) [ Context: James is the owner of a bar which also provides copies of newspapers for its clients. Yasu, an employee at the bar, is responsible for keeping the newspaper selection in order. Flora is reading a newspaper which was left on the bar by a previous customer. James says to Yasu: ]
- a. #*Banja Luka Weekly* **is sitting** on the bar.
- b. ?*Banja Luka Weekly* **is not sitting** on the bar.

The pattern demonstrated by the ‘idle’ inference in (74) differs from the clearly projective *quit* in (73). The ‘idle’ inference, which contributes the meaning that the subject referent of *sit* is not actively used, is contradicted by the provided context. The plain assertion in (74-a) is infelicitous in this context, supporting the claims above that the ‘idle’ inference is consistently present with non-literal *sit*. Curiously, the negated sentence in (74-b) is odd, but not infelicitous in the same way as (74-a): the sentence in (74-b) seems to be

<sup>30</sup>See, e.g., Simons et al. (2010), who explicitly propose that the projectivity and non at-issueness of an expression are correlated.

non-informative in that context, rather than contradictory.<sup>31</sup> This suggests that the ‘idle’ inference does not seem to exhibit a standard property of not-at-issueness, even though it was shown in it the direct denial test of (72) to be not at-issue.

A felicitous variation of (74-b) would be a sentence such as the one in (75).<sup>32</sup> This response includes exclusive *just*, boldfaced, and in the same context as (72).

(75)  $\phi$ : ‘The newspaper is not being actively used.’

- a. *The Banja Luka Weekly* is sitting on the bar.  $\phi$   
 b. Well it is not **just** sitting there. I am reading the front page headlines.  $\neg\phi$

It is unclear whether the felicity of (75-b) suggests that the ‘idle’ inference is at-issue or not-at-issue. The contribution of *just* in (75-b) has an exclusive flavour, meaning that it is similar to *only* or *merely* (Coppock & Beaver, 2014). On Coppock and Beaver’s scalar analysis, the use of exclusive indicates that there is a ranking of possibilities. When a sentence with an exclusive is negated, as in (75-b), it is implied that at least the asserted content is true, on a contextually-relevant scale. For (75-b), this would mean that it is at least true that the newspaper is located on the bar, and the continuation gives more information about the newspaper with respect to that scale.<sup>33</sup> I do not pursue this idea of exclusion further in this thesis, because that meaning is contributed by *just*, not *sit* itself. However, it would be interesting to investigate this compatibility of *just* with the ‘idle’ inference. In particular, one could see whether the compatibility is due to the ‘idle’ inference being dependent on the ‘stationary’ inference. This idea of interdependence has been mentioned before, when the inference was first introduced in §2.3.3. Namely, for most subject referents, it is impossible to use them without moving them: books or food need to be picked up, i.e., moved, in order to use them. Dependency of the ‘idle’ inference on the ‘stationary’ entailment is an idea left aside for future work.<sup>34</sup>

For the purposes of the present investigation, it is important to demonstrate how the ‘idle’ inference differs from the ‘stationary’ inference, as well as to classify their types with respect to at-issue and not-at-issue. The former point is relevant to this thesis, because a main research goal is to propose a definition of the current literal and non-literal uses

<sup>31</sup>A similar oddness is seen with entailed content, as in (i).

- (i) [ Context: James and Yasu are hanging out. Yasu is wearing green flip-flops. James says to Yasu: ]  
 ??Your flip-flops are not green, they are red.

<sup>32</sup>Thanks to James Gray, p.c., for this suggestion.

<sup>33</sup>An easier example to swallow is in (i). The negation of the *just* sentence implies that there is another possibility higher on the scale. In this case, it is marriage, which, as a legally binding contract, is more than engagement, which is a promise only.

- (i) We are not **just** engaged, we are married!

[ Coppock & Beaver 2014, p. 380]

<sup>34</sup>For example, one could see if this is a case of *COSUPPOSITIONS* (Schlenker, 2017), which only arise when the asserted content is true. However, Schlenker’s theory is centred on gestures, so it would need to be examined whether inferences in spoken language can behave similarly.

of *sit*, and such a definition should be accurate. The latter point is relevant, both for the accuracy of the definition, and because the diachronic framework within which I build my proposal comprises a relevant inference. Such an inference arises at some point with the original meaning in certain contexts; it eventually becomes consistently associated with the new meaning. In Chapter 7, I argue that the ‘idle’ inference is the relative one for *sit*; it was shown in the present chapter that the inference is strongly present in the non-literal use. In the future of non-literal *sit*, it is possible that the ‘idle’ inference becomes a conventional implicature, always present and projecting even in the scope of semantic operators. For now, the relevant information about this inference is not a specific label, but its consistent association with non-literal *sit* and its not-at-issue status.

In sum, the data and analysis of this section has argued that the ‘stationary’ inference, also known as a core meaning component of *sit* (s. §2.3.3), is an entailment which persists across the literal/non-literal divide, as was shown in in §4.1. The ‘idle’ inference is consistently associated with non-literal *sit* and it has been diagnosed as not-at-issue content. The exact nature of this inference remains an open question. Nonetheless, identifying the ‘idle’ inference as being not-at-issue is an important contribution of this section, and the inference will be relevant again in Chapter 7.

### 4.3 Summary and outlook

The main research goals of this chapter have been to delimit the possible subject types with *sit* and to determine the nature of the ‘stationary’ and the ‘idle’ inference. In teasing apart the two inferences, these goals have been met.

Regarding the variety of subject types, I proposed four features of the subject referent in §4.1 and argued that the literal use of *sit* requires all four to be positively valued. Namely, it is required that any subject referent of literal *sit* is [+sentient, +butt, +moveable, +concrete]. As was previously demonstrated in §2.2, eligible subject referents are typically humans or mammalian quadrupeds. The literal use of *sit* is accompanied by the ‘stationary’ inference only. As was argued in the discussion in §4.1.6, the ‘idle’ inference can be present, but it is not contributed by literal *sit*.

In the case that any of the four subject features are negatively valued, the use of *sit* is non-literal; based on a permutation of these features, as applicable to the real world, I proposed four specific types of subjects. Each subject type was investigated in §4.1.1–4.1.5, where the argument structure requirement concerning a postverbal component was confirmed, in addition to the presence of the ‘stationary’ and ‘idle’ inferences examined in the subsequent section. Even though there are a number of different subject types, with nuanced preferences for, e.g., a postverbal adjective in the case of the whale type subject presented in §4.1.2, the argument structure is uniform across non-literal *sit*. Regarding the inferences, the data in §4.1 demonstrated that the ‘stationary’ inference is present in both the literal and non-literal uses of *sit*, while the ‘idle’ inference is present in the non-literal use only. In §4.2 I used standard diagnostics from the literature to

argue that the ‘stationary’ inference is at-issue for both uses of *sit*, and I propose that it is entailed for both uses. The ‘idle’ inference cannot be denied by a second speaker, indicating that it is not eligible as at-issue content, further common diagnostics provided curious results. Its exact nature remains an open question, although I will emphasise here that idleness is strongly associated with non-literal *sit*. This has been seen in the high frequency of postverbal adjectives encoding this or similar properties reported in Chapter 3, and the difficulty in same-speaker cancellations shown for all but the castle subject types in §4.1; the castle subject type requires extra contextual support, by means of an extended temporal interval, similar to what is seen with idle humans.

As we will see in the diachronic theory presented in Chapter 6, semantic change often involves inferences becoming conventionalised, i.e., associated with a form in multiple contexts and then eventually becoming part of the form’s new meaning. The ‘idle’ inference is consistently associated with non-literal *sit*, and it was shown in §4.2 that this inference is not-at-issue meaning, separate from the ‘stationary’ inference. I propose in §7.1 that the ‘idle’ inference plays a role in the diachronic path from literal *sit* to non-literal *sit*. The synchronic snapshot of the two uses presented in this chapter indicates that in the diachronic change from the former to the latter, the ‘stationary’ inference is preserved.

Together with the corpus studies’ observation that postverbal adjectives are possible in lieu of locations, the variety of subjects presented in this chapter demonstrates the breadth of possibilities for non-literal *sit*, as well as the limitations depending on the subject type. Even with such a wide variety of subjects, non-literal *sit* remains constant with respect to its argument structure and core meaning of non-movement, in addition to a strong association with the ‘idle’ inference. In Chapter 5, I motivate a synchronic analysis of both uses of *sit*, beginning with an account of the differences in argument structure.





## Chapter 5

# A synchronic picture of literal and non-literal *sit*

In the preceding chapters, I compared and contrasted the literal and non-literal uses of core posture verbs generally, and *sit* more specifically. Despite their similar surface structure the two uses have different underlying structures. One manifestation of this difference is, as was introduced in §2.1.2, that the non-literal use requires a postverbal component, while this is optional for the literal use. This alternation is illustrated in (1).

- (1) *The postverbal component in literal and non-literal uses of sit*
- |    |  |             |
|----|--|-------------|
| a. | Lou sat (on the couch impatient).                      | LITERAL     |
| b. | <i>The Paris Review</i> sat *(on the shelf abandoned). | NON-LITERAL |

The literal use in (1-a) can appear without a location or an adjective, while the non-literal use in (1-b) cannot. Although the accounts in §2.3 discuss non-literal uses of posture verbs in a way suggesting the postverbal component is always locative, we saw in the naturally-occurring data of the corpus studies in Chapter 3 that in fact adjectives can substitute these locations.<sup>1</sup> In addition, it was demonstrated in §4.1 that this postverbal material is required no matter the features of the non-literal use's subject referent.

A second difference between the literal and non-literal uses concerns the subjects.<sup>2</sup> This difference was examined in §2.3.3, where I used embedding under *persuade* and the volitional modifier *deliberately* to argue that the literal use's subject is an agent and the non-literal use's subject is a theme. Examples with *deliberately* are in (2), where it is expected that an agent, typically considered to be volitional, can felicitously combine with *deliberately*; in contrast, a theme cannot.

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<sup>1</sup>There were additionally two sentences with abstract subject referents and postverbal temporal PPs. As noted in §3.1.4, the two observations of non-literal *sit* in Corpus Study I with postverbal temporal PPs resemble existential uses, not predicational uses of the temporal PPs. That is, these two sentences, both with abstract subjects, described the existence of, e.g., a question, and the length of time of that existence. The analysis of this combination remains an open question.

<sup>2</sup>Throughout this chapter, I use the term "subject" to refer to the clause's surface subject, which is VP-internal and can be an underlying object, depending on the verb (Perlmutter, 1978; Burzio, 1986; Levin & Hovav, 1995).

- (2) *Subjects in literal and non-literal uses of sit*
- a. Lou sat on the couch (**deliberately**). LITERAL
- b. *The Paris Review* sat on the shelf (**#deliberately**). NON-LITERAL

As can be seen in (2-a), the literal use can felicitously combine with *deliberately*, suggesting that the subject referent volitionally put themselves into a sitting position, from which follows that they are sentient. Based on the investigation in §2.2 and in §4.1, we also know that this subject's referent has a butt, the required anatomy for a sitting position. The subject of the non-literal use in (2-b), on the other hand, is not compatible with *deliberately*. In addition, this particular subject referent, a literary magazine, is clearly non-sentient and butt-less, the first detail disqualifying it from being an agent. I assume here that non-literal *sit*'s subject is a theme.<sup>3</sup> Following standard assumptions in syntactic theory, the difference between the two uses' argument structure is that the literal use's agent is an external argument and the non-literal use's theme is an internal argument. These two differences, i.e., the postverbal component's status and the subject's status, are motivations to analyse each use differently with respect to the verb type and thereby their respective syntax.<sup>4</sup> The main research goals of this chapter are to compare the literal and non-literal uses' verb types, postverbal locatives, and postverbal adjectives; and to provide an account for these comparisons. I argue in §5.1 that the literal use is a lexical verb and the non-literal one a copular verb. In §5.2, I also propose a structure and lexical entry for each use, formally representing the insights up to that point. Following this foundation, the postverbal components are examined in more detail. First, postverbal locations are compared for each use in §5.3, then postverbal adjectives are addressed in §5.4. Interestingly, for both categories, the content of the postverbal element is similar for both the literal and non-literal use, even though their underlying position is different. Finally, §5.5 concludes the chapter.

## 5.1 The copular connection

In this section I argue that the non-literal use is a copular verb, used in predicative copular clauses, and propose that the verb takes a PredP as its complement. Pred mediates the predication relation between the preverbal NP, what I have been calling the "subject", and the postverbal XP: both of these components are generated in PredP.

It is not a new observation that non-literal posture verbs resemble the copula, with a locative addition (s., a.o., Maienborn 1990, 1991; Levin & Hovav 1995; Rothmayr 2009).

<sup>3</sup>Interestingly, even when the subject is sentient, such as was shown with the whale-type subjects of §4.1.2, volitional is incompatible, as is seen in (i).

- (i) The snake sat (**#deliberately**) next to our tent.

<sup>4</sup>It was argued in §2.1 that *sit* is ambiguous, and not polysemous, and so it is not unexpected that the two uses are two different verb types.

A common translation of the non-literal posture verb is in (3), where  $x$  represents the subject and  $y$  the location.

(3) [ **be-at**( $x, y$ ) ]

[ after Levin & Hovav 1995, p. 132 ]

In (3), this locative meaning is represented with the relation **be-at**, in particular the **at** portion; the variable  $y$  represents the location variable. My account deviates from such proposals in that I argue the locative component can be replaced by a postverbal adjective. In addition, I go further than authors like Rothmayr (2009), in stating not just that non-literal *sit* resembles the copula, but that it is a copular verb itself. I motivate this claim in §5.1.1 and furthermore argue in §5.1.2 that clauses with non-literal *sit* are predicational. Analysing non-literal *sit* in this way accounts not only for the requirement of postverbal material, as that postverbal phrase is the main predicate, but also for interchangeability of postverbal locations and adjectives, unlike the structure in (3). Building on these insights, I explicitly argue in §5.2 for a PredP structure of non-literal *sit*.

### 5.1.1 The copula and copular verbs

The goal of this subsection is to motivate an analysis of non-literal *sit* as a copular verb. To do so, we must first elucidate the boundaries between copulas and copular verbs. It has been previously pointed out in the literature (Moro, 1997; Pustet, 2003; Poortvliet, 2018), that different authors across various subfields use the terms “copula” and “copular verb” in ways inconsistent with one another. Traditionally, a copula like *be* in English is said to be an empty element, not contributing semantic information on its own, but linking the subject and another predicate with semantic content (Carlson, 1977; Hengeveld, 1992; Pustet, 2003; den Dikken, 2006, a.o.). For example, the sentence in (4-a) could be translated into predicate logic like in (4-b), where only the NP *Greenland*, represented as an individual constant  $g$ , and the adjective *cold*, represented as a predicate **cold**, are present.

- (4) a. Greenland is cold.  
b. **cold**( $g$ )

For the copular sentence in (4-a), the inflected copula, *is*, is an identity function on *cold*, the predicate **cold**. This function ascribes the property ‘being cold’ to the subject *Greenland*. Other than the inflection, the copula would be considered to have no semantic contribution on such accounts viewing it as an empty element.

Typically an argument for semantic emptiness of the copula is connected to its omisibility in some languages. In an example from the literature, Hengeveld uses Turkish data like in (5)–(7) to argue that the copula is contributing no semantic information itself (Hengeveld, 1992, p. 28). The sentences in (5) are in future tense, those in (6) are

in past tense, and those in (7) are in present tense; all sentences predicate the property ‘unemployed’ of the speaker.

- (5) a. *İşsiz ol-acağ-ım.*  
unemployed COP-FUT-1SG
- b. \**İşsiz-eceğ-ım.*  
unemployed-FUT-1SG  
‘I will be unemployed.’
- (6) a. *İşsiz i-di-m.*  
unemployed COP-PAST-1SG
- b. *İşsiz-di-m.*  
unemployed-PAST-1SG  
‘I was unemployed.’
- (7) a. \**İşsiz ol-∅-um/i-∅-yim.*  
unemployed COP-PRES-1SG/COP-PRES-1SG
- b. *İşsiz-∅-im.*  
unemployed-PRES-1SG  
‘I am unemployed’

[ TURKISH; Ersen-Rasch 1980 ]

For Hengeveld, it is crucial that although all sentences describe the same semantic relation of the speaker being unemployed, the variation among tenses lies in whether the copula is obligatory or not. This is taken to suggest that only the non-verbal predicate is the main predicate, i.e., the item contributing predication information. The copula is then analysed as an auxiliary, carrying the inflection for person and tense/aspect/mood, but otherwise lacking what the author calls semantic content.

Rothstein (1999, 2004) provides counter-evidence to the semantically-empty *be* claim. Included in this data are temporal interpretations of the complement embedded under a verb with Exceptional Case Marking (ECM). In (8), the target predication is a small clause complement of the ECM verb *consider*. If the copula is considered to have no semantic contribution, it would be expected that (8-a) and (8-b) are identical in meaning. However, there is an inference that the predication in (8-a) is something that is generally true of the subject, while the predication in (8) is inferred as being only temporally the case.<sup>5</sup>

- (8) *Additional inference in clauses with be*
- a. Mary considered Jane very clever (#today).
- b. Mary considered Jane **to be** very clever (today).

[ Adapted from Rothstein 2004, p. 277 ]

As suggested by the infelicity of *today*, the sentence with an overt copula in (8-a) carries the inference ‘Mary generally considers Jane to be very clever’; i.e., not just today. In

<sup>5</sup>In the original text, Rothstein uses the terms “individual-level” and “stage-level” to differentiate between the two meanings. This distinction is addressed in §5.4.3.

contrast, *today* is a felicitous addition to the sentence with *to be* in (8-b), where it is understood that Mary does not generally think that Jane is very clever. This cannot be an effect of the adjectival predicate, as both sentences contain the same adjective.

Doubts about the “semantically empty” label also arise when looking at languages with more than one copula. In Black English, it is well documented that in addition to inflected *be* forms, an uninflected *be* can appear in main clauses (Labov, 1969; Green, 1993, 2000; Rickford, 1999). Importantly, these two copula forms are not interchangeable, as they encode different aspectual information. In (9), a frequency adverbial is included, with the prediction that it would be compatible with a property that is usually true of the subject.

(9) *Aspectual differences in English be*

- a. John **is** tired (habitually).<sup>6</sup>
- b. John **be** tired (#habitually).

[ BLACK ENGLISH; after Becker 2004, p. 409 ]

Although in both sentences of (9) ‘tired’ is predicated of the subject, the utterances encode different meanings. In (9-a), with the inflected form of *be*, the referent of *John* is understood to be tired regularly, not just at the time of utterance. This is indicated by the felicity of *habitually*. Conversely, in (9-b) with uninflected *be*, the referent of *John* is understood to be tired only temporarily. This is confirmed by the infelicity of a frequency marker such as *habitually*. Becker (2004) argues that such data is evidence for a split copula system in English, somewhat similar to what is found in, e.g., Indo-Aryan (Deo, 2021), Irish/Scottish Gaelic (Adger & Ramchand, 2003), and Spanish/Portuguese (Luján, 1981; Fernández Leborans, 1999; Marín, 2004; Arche, 2006; Brucart, 2012; Gumiel-Molina et al., 2015; Arche et al., 2017).

The sentences in (8)–(9) suggest that copular *be* is not devoid of meaning. Semantic, or lexical, vacuity is therefore not considered here a definitive component of a copular verb. The rest of the subsection is concerned with what is included in the definition.

In the preceding examples, each grammatical sentence includes two arguments, no matter the language. These arguments are a subject and a postcopular predicate. Depending on the type of copular clause, the subject can be an NP, and the postcopular predicate can be an NP, AP, or PP (s. theory on copular clause types in §5.1.2. The NP subject, in the types of sentences that I am interested in, has the theta role of a theme.<sup>7</sup> The data and discussion above indicate that a copular verb can be distinguished by having (i) an obligatory postverbal component and (ii) a theme subject. Assuming such a definition means that a copular verb can contribute additional meaning.

The approach taken in this thesis is in opposition to those distinguishing amongst “semi-copulas” and “pseudo-copulas” such as *become*, *remain*, *taste*, etc., often with unclear boundaries or definitions (e.g., Hengeveld 1992; s. Poortvliet 2018, §2 for detailed criticism).

<sup>6</sup>In the original version of (9-a), Becker (2004) includes the option of omitting inflected *be*. Here, only *is* is used, as this particular variation is orthogonal to the arguments presented here.

<sup>7</sup>For example, experiencers, like in *I am sad*, are also possible theta roles. These, however, are irrelevant for non-literal *sit* and its predominantly inanimate subjects.

Instead of making such distinctions, I follow van Gelderen (2015, 2018) and acknowledge broader similarities across copular verbs. She bases her discussion of English copular verbs on Visser (1963), who had identified around 100 verbs as copular in various stages of English. Included on this list are the core posture verbs, as according to her they meet the two conditions of (i) obligatory postverbal component and (ii) theme subject.<sup>8</sup> Interestingly, van Gelderen (2015, 2018) argues that copular verbs are always grammaticalised elements, and that the differences in lexical contribution are due to them being in different stages of language change (s.a., e.g., Devitt 1990; Lohndal 2009; Poortvliet 2018). In particular, ‘be’ copulas are the most grammaticalised elements amongst the copular verbs.<sup>9</sup> This would mean that the differences in orientation encoding between non-literal uses of *stand/lie* and *sit*, introduced in §2.1, are just differences in lexical contribution. However, examples were presented in §2.3.2 where the former posture verbs can appear in certain contexts without any postverbal component, demonstrating that these particular non-literal uses are currently not copular verbs on the definition I assume here. In this thesis I advocate a view considering diachronic change (s. Chapters 6–7), in particular of the posture verbs going from lexical verbs to copular verbs. My definition of copular verb is stricter than that of van Gelderen (2015, 2018), and therefore I do analyse *sit* as a copular verb, but do not analyse non-literal *stand* and *lie* as copular verbs in their current state.

In sum, this subsection presented previous authors’ views on the possible boundaries of copulas and copular verbs. I assume in this dissertation that a copular verb is one that meets two requirements, an obligatory postverbal component and a theme subject, and that can contribute additional meaning. Non-literal *sit* meets both of these requirements. The next subsection builds on this copular claim, and identifies in what type of copular clause non-literal *sit* appears.

### 5.1.2 Different functional types of copular clauses

The present subsection describes the semantic functions of copular clauses, using the traditional typology by Higgins (1979) as a starting point. Beyond this description, the main goal of this subsection is to identify the functional type of non-literal *sit*’s copular clause. It is important to confirm this identity before going forward with my analysis of non-literal *sit* and the possible postverbal predicates with which it often combines.

Higgins (1979, pp. 203–293) distinguishes four different types of copular sentences, and these are commonly assumed in the literature. Examples of each type are in (10).

(10) *Higgins’s typology of copular sentences*

a. The lockdown was terrible.

PREDICATIONAL

<sup>8</sup>In addition, van Gelderen (2018) explicitly argues that aspect is preserved in a diachronic change (s.a. McNally & Spalek 2022, who make similar claims about event-referential properties being preserved across the literal/non-literal divide). The core posture verbs follow this pattern, in maintaining their interval stative status across the literal and non-literal uses (s. §2.3.3).

<sup>9</sup>For this reason, I sometimes refer to ‘be’ verbs as “copulas”, especially when discussing languages such as Spanish, which have two ‘be’ verbs.

- |    |                               |                        |
|----|-------------------------------|------------------------|
| b. | Isak Dinesen is Karen Blixen. | EQUATIVE <sup>10</sup> |
| c. | The problem is the oven.      | SPECIFICATIONAL        |
| d. | That is Susan.                | IDENTIFICATIONAL       |

In all sentences of (10), there are two XPs, which can be DPs, PPs, etc; XP<sub>1</sub> appears before the verb and XP<sub>2</sub> after it. In (10-a), XP<sub>2</sub>, *terrible*, is a predicate of an individual, hence of type  $\langle e, t \rangle$ .<sup>11</sup> These postcopular elements of PREDICATIONAL clauses are typically called “predicative complements”; “predicative” meaning that the postcopular XP<sub>2</sub> ascribes a property to the precopular XP<sub>1</sub>. In the example sentence in (10-a), the predicative complement assigns the property of being terrible to the referent of XP<sub>1</sub>, *the lockdown*. The preverbal XP<sub>1</sub> of a predicative copular clause always has the semantic type *e*.

As is indicated by the name, the EQUATIVE copula in (10-b) equates two individuals as being the same, and XP<sub>1</sub>/XP<sub>2</sub> are understood to be interchangeable. The semantic type of both XPs in an equative clause is *e*. Here, the referent of XP<sub>1</sub>, *Isak Dinesen*, is the same as the referent of XP<sub>2</sub>, the woman Karen Blixen.<sup>12</sup>

The SPECIFICATIONAL clause in (10-c) is domain-delimiting, in the sense that a variable is introduced by XP<sub>1</sub> and a value for that variable is found in the post-copular XP<sub>2</sub>. For (10-c), the unsaturated variable is introduced by *the problem* and finds its value in *the oven*. The semantic type of XP<sub>1</sub> is  $\langle e, t \rangle$ , and the type of XP<sub>2</sub> is *e*.

The IDENTIFICATIONAL sentence in (10-d) has a demonstrative XP<sub>1</sub> with deictic reference (Higgins, 1979, p. 220). Mikkelsen (2005) argues that by looking at the semantic types of the XPs, we can see that the IDENTIFICATIONAL category is a classificational misfire. Instead, she argues for a reclassification, naming two subtypes which can actually belong to other categories. Mikkelsen’s arguments are based on examples such as in (11).

(11) *Two types of “identificational” copulas*

- |    |                             |                        |
|----|-----------------------------|------------------------|
| a. | <b>That woman</b> is Susan. | DEMONSTRATIVE EQUATIVE |
| b. | <b>That</b> is Susan.       | TRUNCATED CLEFT        |

[ after Table 4.3 in Mikkelsen 2005, p. 49 ]

The important difference between the two sentences is in the semantic type of XP<sub>1</sub>. The DEMONSTRATIVE EQUATIVE in (11-a) is all but identical to the EQUATIVE type in (10-b), where the only difference is the demonstrative on the DP. As such, the semantic type of XP<sub>1</sub> in (11-a) is *e*. On the other hand, XP<sub>1</sub> in the TRUNCATED CLEFT of (11-b) is not an individual. Instead, it is of type  $\langle e, t \rangle$ . For (11-b), the unsaturated variable is introduced by the bare demonstrative *that* and saturated by the individual referent of *Susan*.

Mikkelsen (2005, §6) characterises the semantic type of lexical categories as having three possibilities. These are listed in (12).

<sup>10</sup>Also known as the “identity” type.

<sup>11</sup>The semantic types are not originally discussed by Higgins. These semantic types are from the discussion in Mikkelsen (2005) and Partee (2010).

<sup>12</sup>Isak Dinesen is one of the pseudonyms Blixen used, most famously for *Out of Africa*.

- (12) *The semantic type of lexical categories*
- a. Names and personal pronouns can be **individual-denoting**.
  - b. APs, PPs, and determinerless NPs can be **property-denoting**.
  - c. Definite and indefinite DPs can be **either individual- or property-denoting**.

[ Mikkelsen 2005, pp. 95–96 ]

In (12-a), names and personal pronouns, such as *Isak Dinesen/Karen Blixen* in (10-b) or *Susan* in (10-c), are described as being individual-denoting only. In (12-b), property-denoting lexical categories are outlined; included in the list are APs, like *terrible* in (10-a). In (12-c), DPs with varying definiteness are noted to also be variable in their referentiality. For example, *the lockdown* in (10-a) or *the oven* in (10-c) are both referential, while an NP like *the teacher* can be non-referential.

Following, e.g., Mikkelsen (2005), Geist (2007), and Partee (2010), I assume there are three functional types of copular sentences, summarised in Table 5.1.<sup>13</sup>

TABLE 5.1: Functional types of copular clauses

Type	XP <sub>1</sub>		XP <sub>2</sub>		Example(s)
PREDICATIONAL	individual	$e$	property	$\langle e, t \rangle$	(10-a)
EQUATIVE	individual	$e$	individual	$e$	(10-b), (11-a)
SPECIFICATIONAL	property	$\langle e, t \rangle$	individual	$e$	(10-c), (11-b)

PREDICATIONAL and SPECIFICATIONAL clauses complement each other with respect to what the two XPs denote. In other words, in a predicational clause XP<sub>1</sub> is individual-denoting and XP<sub>2</sub> property-denoting, while in a specificational clause, XP<sub>1</sub> is property-denoting and XP<sub>2</sub> individual-denoting. EQUATIVE clauses have both an individual-denoting XP<sub>1</sub> and an individual-denoting XP<sub>2</sub>.

Moving on now to *sit*, let us first consider the surface structure. Both uses of *sit* not only have the same surface structure, but XP<sub>1</sub> and XP<sub>2</sub> are the same types: an individual-denoting XP<sub>1</sub> and a property-denoting XP<sub>2</sub>. However, based on the evidence in Chapter 2, we know that their underlying argument structure differs. Namely, the literal use has a VP-external subject, most likely an agent, and an optional postverbal element, while the non-literal use has a theme subject and obligatory postverbal component. As introduced in the beginning of this chapter and then argued in §5.1.1, I take this as evidence that the literal use is a lexical verb, and the non-literal use is a copular verb.

Combining what we know about the argument structure and functional types of copular clauses, it is clear that, syntactically, the only possibility for non-literal *sit* is the PREDICATIONAL TYPE. That is, the XP<sub>1</sub> can only be an individual, a theme subject, and the XP<sub>2</sub> can only be a property. The former is straightforward and does not require further examples, but I confirm here the latter status.

<sup>13</sup>Of course, the representation in the table is a simplified one. For example, nominals with quantifiers are ignored. See Mikkelsen (2005) for relevant discussion.



Up until now it has only been implicit that NPs are impossible postverbal elements. The impossibility of an NP as XP<sub>2</sub> is illustrated in (13), with the postcopular XP<sub>2</sub> boldfaced in each sentence.<sup>14</sup>

- (13) *Lexical categories of XP<sub>2</sub> for non-literal sit*
- a. *Out of Africa sat {on the counter|for days|overdue}. PP, AP*
- b. *\*Out of Africa sat {the book|Karen Blixen}. \*NP*

The felicitous sentence in (13-a) contains three different types of expressions of type *e*: a locative PP *on the counter*, a temporal PP *for days*, and a depictive predicate *overdue*. The infelicitous sentences in (13-b), on the other hand, contain NPs: the indefinite *a newspaper* and the proper name *Karen Blixen*. With this, we can conclude that non-literal posture verbs appear in PREDICATIONAL copular clauses.

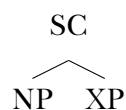
This subsection outlined the different functional types of copular clauses which are assumed in the literature. After the types were presented, I demonstrated that the non-literal posture verbs appear in PREDICATIONAL clauses only. The next section addresses the structural assumptions associated with predicational clauses, in addition to proposing the formal details of both literal and non-literal *sit*.

## 5.2 Formal differences across the literal/non-literal divide

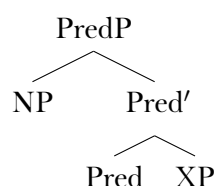
The theoretical background in §5.1.1 defined a copular verb as always appearing with a non-verbal predicate and having a theme subject. Non-literal *sit* meets both of these requirements, and I therefore analyse it as a copular verb; literal *sit*, in contrast, is a lexical verb. In the previous subsection, §5.1.2, I demonstrated that non-literal *sit*'s copular clause type is predicational; i.e., that the postverbal components of *sit* are the main predicates of the clause. In the current section, I present my structural assumptions about such predicational clauses, and how this applies to *sit*. Following this, I propose formal representations for non-literal and literal *sit* and argue that these representations reflect the empirical differences observed thus far.

Although there are varying perspectives on the details of predicational clause structure (Stowell, 1978; Higgins, 1979; Bowers, 1993; Moro, 2000; Rothstein, 2004; Mikkelsen, 2005; den Dikken, 2006), there are a few main features common to the accounts: they denote a subject-predicate relation and are less complex than full clauses. Inherent to this definition is that the predicate is not an inflected verb, meaning that other lexical categories such as prepositions, adjectives, infinitives, and gerunds can be analysed with a predicational clause. Two perspectives dominate the discussion: SMALL CLAUSE THEORY and PREDICATION THEORY. The term SMALL CLAUSE is first credited to Williams (1975); a tree illustrating its structure is in (14).

<sup>14</sup>In §5.4, I show that the postverbal adjectives combining with *sit* can only be stage-level predicates. Similarly, locatives, which are the most common type of postverbal component, are typically analysed as stage-level predicates. In contrast, nominals are typically analysed as individual-level predicates. Hence, the impossibility of postverbal NPs with non-literal *sit*.

(14) *Small Clause Theory*

Authors such as Moro (1997) assume an exocentric structure like the one in (14), whereupon a small clause is projected by the maximal projections NP and XP. In a structure like in (14), the copular verb serves only to fulfil tense and agreement, and the NP and XP are a constituent by themselves; no complex predicate is formed with the verb. Instead, the small clause is adjoined to the VP (Manzini, 1983). The competing theory's structure is in (15).

(15) *Predication Theory*

Within Predication Theory, a hierarchical structure similar to what is seen in the verbal domain is assumed; i.e., the NP is generated in the specifier of the functional head Pred.<sup>15</sup> The NP is thus an external argument of the predicate XP. In this case, NP and XP are not a syntactic constituent. Rather, a complex predicate is formed with the verb and the predicate. Following Rothstein (1983) and Chierchia (1989), Bowers (1993, FN 2) argues that the NP fulfils the Extended Projection Principle (EPP). Similar to Rothstein (2004), Mikkelsen (2005), Roy (2013), and van Gelderen (2015, 2018), I assume the predicational clause of a copular verb contains a PredP.

In copular accounts a raising analysis is typically appealed to (Rothstein, 2004; Roy, 2013; van Gelderen, 2015, 2018, a.m.o.), which is what I assume as well. The raising analysis is usually accredited to Stowell (1978), who originally proposed it for existential constructions. This is illustrated with the underlying form of both an existential and a predicational copular sentence (16)–(17); the subject *a cat* and its trace are both boldfaced in the underlying form.<sup>16</sup>

<sup>15</sup>Bowers calls the functional category for the predicate “Pr”. It seems more commonplace to use “Pred”, the term first introduced by Svenonius (1994).

<sup>16</sup>Here I use the label PREDP in line with my assumptions, even though in Stowell’s dissertation he adhered to Small Clause theory, and used a different label accordingly.

(16) *Underlying form of existential sentences*

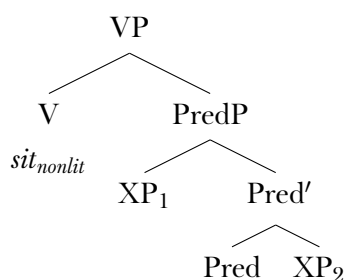
- a. There is a cat under the table.  
 b. [ There [ is [PredP [NP a cat ] [PP under the table ] ] ] ]

(17) *Underlying form of copular clauses*

- a. A cat is under the table.  
 b. [ A cat<sub>i</sub> [ is [PredP [NP t<sub>i</sub> ] [PP under the table ] ] ] ]

In both the existential sentence of (16) and the copular sentence of (17), the subject *a cat* is generated in PredP. In an existential sentence like (16), the subject of the locative predicate is generated and remains in-situ in PredP. As stipulated by the EPP, the empty subject position of the main predicate, *is*, gets filled with existential *there*. In the copular clause in (17), the subject is generated in and then raised from [Spec, PredP]. Depending on one's preferred theory, the name and/or site of the subject can vary: e.g., in Bowers (1993); Rothstein (2004) it is [Spec, IP], in Mikkelsen (2005) it is [Spec, TP]. Although I adhere to the requirements of EPP, subscribing to a specific theory concerning subject movement is not important to this thesis.

As can be seen in a copular clause such as (17), both the subject and postcopular predicate are generated within PredP. However, I do not assume that the copular verb is generated in PredP. This is because small clauses are structural components of various phenomena: in this section alone, there are examples with the ECM verb *consider* in (8) and existentials in (16). I follow authors such as Adger & Ramchand (2003), Baker (2003), and Mikkelsen (2005), who take this variety in phenomena as evidence that the PredP structure, and more generally small clause structure, is not limited to copular verbs. Consequentially, the copular verb is not morphologically realised at Pred, but rather at V.<sup>17</sup> This means that the copular verb non-literal *sit* is realised at V as well. Such a structure of a predicational copular clause is shown in (19).<sup>18</sup>

(18) **The structure of non-literal *sit***

In the tree in (18), XP<sub>2</sub> is the complement of Pred, and it represents the postcopular predicate. The details of two XP<sub>2</sub> types, locative and adjectival, are elaborated upon in §5.3–5.4. In [Spec, PredP], XP<sub>1</sub> is generated, and it represents the subject of the copular clause. The variety of subject referents is discussed in §4.1, where I propose a systematic

<sup>17</sup>See also the alternative account of Roy (2013), where copular verbs are generated in T.

<sup>18</sup>I omit details of tense and aspect here, as this is not crucial to the discussion.

typology of features of the subject referents, and how some have specific preferences for the type of postcopular predicate.

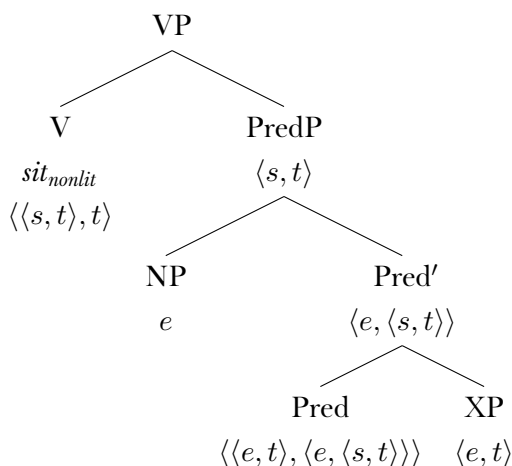
As is discussed in the theoretical background of §5.1.2,  $XP_2$  introduces a property which is predicated of  $XP_1$ ; in the structure in (18) we can see that this predication occurs internal to PredP, before it combines with the verbalizer copular verb. Taking the view that the verb is introduced at V is advantageous because copular verbs vary in meaning, as was discussed in §5.1.1. For example, *become* or *remain* differ from non-literal *sit* in their semantic contribution; they can all be analysed in a similar way, but with different denotations of the verb itself. In other words, no matter the content of the copular verb taking PredP as a complement, the functional head Pred retains the same function.

A number of accounts have proposed different ways to represent Pred in copular clauses. For example, Adger & Ramchand (2003) argue that semantic differences in Scottish Gaelic copular clauses are due to Pred being eventive or non-eventive. Another example is Gumiel-Molina et al. (2015), who motivate an account of Iberian Spanish's split-copula system where Pred is eventive under both copulas. Both of these accounts are concerned with copular clauses that have complementary, or near complementary, distribution, and their analyses require a mechanism to differentiate between structures that both contain PredP. In this thesis, however, the main objects of investigation are the literal and non-literal uses of *sit*. I analyse the former as a lexical verb which often combines with adjunctive locations/adjectives, and the latter as a copular verb with an obligatory component that often is locative or adjectival.<sup>19</sup> In other words, non-literal *sit*'s Pred head does not require any complex mechanisms to differentiate the structure from the literal use. The definition of Pred which I assume in this thesis is presented in (19), and a tree with the semantic types is displayed in (20).

$$(19) \quad \llbracket \text{Pred} \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda x_e . \lambda e_s [\text{THEME}(x, e) \wedge P(x)]$$

The key details for the purposes of this thesis are that Pred introduces a predicate of events and individuals, which assigns the thematic role to the individual that is the surface subject. This individual is also the argument of the property introduced by the postcopular component. These details are further illustrated in the tree in (20).

<sup>19</sup>This observation about the omissibility of the postverbal component was first introduced in §2.1, and corroborated with corpus data in Chapter 3. On top of the differences in omissibility of the postverbal component, I have argued that the literal use of *sit* requires its subject referent have the appropriate anatomy to transition into/out of a sitting position (s. §2.2), while with the non-literal use, many subject referents are possible (s. §4.1). Also, the literal use combines with an agent as its subject, and the non-literal use a theme, as is argued in §2.3.3.

(20) The semantic types of non-literal *sit*'s structure

In (21), I propose a denotation for non-literal *sit*. The entry includes the ‘stationary’ entailment and it is examined in §4.2.<sup>20</sup> There is also a slot for PredP, which gives the verb access to the event variable introduced by Pred; PredP is represented in (21) as  $Q$  with the semantic type  $\langle s, t \rangle$ .

$$(21) \quad \llbracket sit_{nonlit} \rrbracket = \lambda Q_{\langle s, t \rangle} . \exists e_s [\text{stationary}(e) \wedge Q(e)] \quad \langle \langle s, t \rangle, t \rangle$$

In the entry for non-literal *sit* in (21), the stationary entailment introduced as an inference in §2.3.3 and identified as an entailment in §4.2 is represented as **stationary**( $e$ ). In the second part of the entry in (21), we find  $Q$ , which represents PredP. As can be seen in the trees above, the subject NP, and the postcopular XP are generated within PredP. They are related to the event  $e$  introduced there and that event is existentially bound at V.

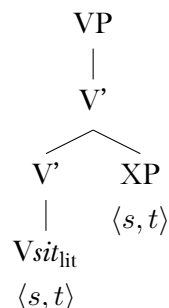
Let us now compare the formal details of non-literal *sit* with its literal counterpart. Data presented throughout this thesis, including (1) in this chapter’s introduction, show that the literal use does not require a postverbal adjective or location for well-formedness. That is, although the surface structure of the two uses resembles one another, the postverbal adjective or location is the main predicate of a copular verb for the non-literal use and it is needed to complete the meaning of the phrase, while the postverbal adjective or location is merely an adjunct of the literal use, modifying the meaning of the phrase. This adjunctive status means that in contrast to the structure of the non-literal use, the literal use cannot be a copular verb like the non-literal use.<sup>21</sup> Instead, I assume that the adjunctive material merges via predicate modification within VP, without changing the composition of literal *sit*. Arguments for the syntactic position are given in §5.3.2 and

<sup>20</sup>In addition, non-literal *sit* contributes an ‘idle’ inference. However, as noted in §4.2, this inference does not contribute to the truth-conditional meaning.

<sup>21</sup>On top of the crucial structural differences of predicative complement vs. adjunct, there are semantic differences between literal and non-literal *sit*. Namely, the former encodes posture (s. §2.3.3); appealing to Kratzer (1996), the agentive subject is severed from the verb itself, being introduced higher up in the structure. In contrast, non-literal *sit* predicates a property of its subject, a theme, further down within PredP; the theme variable is thus saturated in PredP.

§5.4.2 for postverbal locations and adjectives, respectively. The structure for literal *sit* is illustrated in (22).<sup>22</sup>

(22) The structure of literal *sit*



The entry for literal *sit*, a predicate of events, is shown in (23). Note the differences between this entry and the one for non-literal *sit* in (21).

(23)  $\llbracket sit_{lit} \rrbracket = \lambda e_s [\text{**sitting-position}(e) \wedge \text{stationary}(e)]**$   $\langle s, t \rangle$

The ascription of posture is represented in (23) with the function **sitting-position**, and, as we saw in the entry for non-literal *sit*, there is a stationary entailment, represented by **stationary**. No further properties are encoded by literal *sit*.

To summarise, in this section, an overview of small clause theory was given, background which is relevant to non-literal *sit*. That is, building on §5.1.1–5.1.2, non-literal *sit* is a copular verb, and I analyse this copular verb as taking a PredP complement. The small clause contains PredP, where the preverbal NP and the postverbal component are generated. The literal use, in contrast, is a lexical verb, and the postverbal component is a VP adjunct. I presented the necessary functional structure in (18) for analysing the contrasts seen between non-literal *sit* and literal *sit*. In addition, I proposed the lexical entries for both non-literal and literal *sit* in (21) and (23), respectively; these entries reflect the proposed structure, as well as the semantic differences which are not visible in the syntax. The next two sections discuss characteristics of the postverbal options, both in terms of structure and content. First, we look at the locative component in §5.3, then at the adjectival component in §5.4.

### 5.3 Postverbal locations

Even though the surface structure of literal and non-literal *sit* uses are seemingly the same, in the previous sections I argued for an analysis of literal *sit* as a lexical verb and non-literal *sit* as a copular verb. The present section and the subsequent one are both concerned with what comes after the verb: locatives and adjectives, respectively. For

<sup>22</sup>If one assumes a different syntactic theory, then the labels might differ. The relevant takeaway from the tree in (22) is that the postverbal component is an adjunct.

postverbal locations, this means that a location with the former adjoins to the VP, and that a location with the latter is generated within the PredP, as was shown in (18).

The main research goals of the present section are to (i) identify the type of locations which can combine with literal and non-literal *sit*, and (ii) confirm whether the claims of §5.1–5.2 are compatible with formal theory on locatives. The first two subsections on locatives, §5.3.1–5.3.2, address (i), first by delimiting stative versus dynamic locatives, and then the functional types of locatives. The second subsection, §5.3.2, additionally addresses (ii), as different functional types have different combination conditions; the final subsection, §5.3.3 presents an account of how these ideas can be formally implemented.

### 5.3.1 A spatial dichotomy

This subsection describes different types of locatives with respect to the type of relation between the figure and the ground. The next subsection examines the function of locatives, identifying which ones combine with the literal and non-literal uses of *sit*. The key result of the present subsection is identifying that the type of locatives combining with *sit* are stative in nature, as I have been assuming throughout this thesis.

Talmy (1972, subsequent work) characterises locatives as describing the relation between the FIGURE and the GROUND. That is, in a sentence like the one in (24), the FIGURE, the referent of *the cat*, is located in terms of the GROUND, the referent of *the sofa*; the preposition *on* defines the parameters of the relation, i.e., that the cat is located above and touching the table.

(24) The cat is on the sofa.

It has been argued, however, that spatial relations are more complex than simply locating an entity somewhere. A main distinction centres on the concepts of dynamicity and stativity, and it concerns how the preposition of a locative PP encodes the spatial relation with respect to the location.<sup>23</sup> In the following, I first outline how these two concepts are relevant in the domain of locations, then discuss the correlation of the (non-)literal uses with dynamic and stative characteristics.

A traditional division of the spatial prepositions is between dynamic PATHS and stative PLACES (Jackendoff, 1972, 1976, 1983). Examples of each are in (25).

- (25) a. The cat is sleeping {on|under|behind|...} the sofa. PLACE  
 b. The cat jumped {onto|from|across|...} the sofa. PATH

In the various possibilities of (25-a), a sleeping cat is located in one place for the entire relevant interval. In contrast, in (25-b), a jumping cat is moving from one point in space to another; the direction of the movement depends on what is encoded for the particular preposition. For example, the first choice in (25-b) is *onto*, which describes

<sup>23</sup>Here, a dynamic relation is one that describes an eventuality with a change, whereas a stative one is non-changing, or homogeneous, for the specific time period (s.a. interval statives in §2.3.3). Although their exact meanings differ, “stative” and “static” are used interchangeably here, as is common in the literature.

the cat as originating on the floor and then moving vertically in the direction of the sofa, eventually reaching it.

In terms of the main object of investigation in this thesis, *sit*, the relevant type of locative for the non-literal use is the place type. This is demonstrated in (26).

(26) *Non-literal uses pattern with place PPs*

- |    |  |       |
|----|--|-------|
| a. | The book sat {on under beside. . . } the table.    | PLACE |
| b. | *The book sat {onto from across . . . } the table. | PATH  |

The literal use more or less patterns the same, preferring a place PP. There is one difference, where unlike the non-literal use, the literal use allows a path preposition, *across*. This is shown in (27).

(27) *Literal uses pattern with place PPs*

- |    |  |       |
|----|--|-------|
| a. | The cat sat {on under beside. . . } the table.     | PLACE |
| b. | The cat sat {*onto *from across . . . } the table. | PATH  |

The interpretation of the path preposition in (27-b) is not dynamic in the same way as when it was a complement of the motion verb *jump* in (25-b). Such a path is known as a stative path, and can be seen in the phenomenon called “extent predicates” (Jackendoff, 1990; Talmy, 1996; Gawron, 2005, 2009, a.o.). Such predicates are ambiguous between a dynamic event reading and a stative extent reading. This is illustrated in (28).

(28) The fog extended (from the pier to the point).

- |    |  |
|----|--|
| a. | EVENT: ‘During the eventuality, there was a gradual increase in spatial area of the fog, beginning at the pier and ending at the point.’ |
| b. | EXTENT: ‘The fog’s spatial area covers the area between the pier and the point; there is no increase during the eventuality.’            |

[ After Gawron 2009, 44ff ]

The difference between the event reading in (28-a) and the extent reading in (28-b) lies in whether or not the spatial area of the fog increased. Namely, the area of the fog increases over time, i.e., it is dynamic, for the event reading (28-a), and the area does not increase over time, i.e., it is stative, for the extent reading (28-b). Gawron (2009, p. 6) defines a broader class of “axial predicates”, which are characterised by their selection of a path PP and orientation along a spatial axis, whether dynamically or statively.

Interestingly, in FN 4, Gawron (2009) mentions English posture verbs within a discussion that almost all zero-derived, stative-inchoative pairs are extent predicates. He explicitly excludes the posture verbs and *occupy*, arguing that the stative use of these verbs do not select a path PP, thereby disqualifying them from an inclusion in his extent class. However, as was seen in (27-b), literal posture verbs sometimes select path PPs, so an exclusion based on this criterion alone is unjustified. The non-literal posture verbs and



the extent readings of the extent predicates are similar, having a non-agentive subject and being temporally stative.

In sum, this subsection introduced a traditional distinction in the literature concerning types of spatial prepositions and the respective PP: path PPs vs. place PPs. I presented examples which indicated that while literal uses of *sit* are more liberal with respect to the type of spatial PP with which they can combine, the overall interpretation is always stative. In addition to identifying the type of compatible spatial PPs, I made a comparison of the literal use with extent predicates. The non-literal use can only combine with a place PP. It is argued in the next subsection that the literal use's location further differs from the non-literal's, in particular with respect to what exactly is being located.

### 5.3.2 Different types of locations

In the previous subsection, I showed a difference between non-/literal uses of *sit* in terms of their possible locative relations. Now I pivot to presenting a typology where locations are differentiated by their function and syntactic status; this subsection draws heavily from Rothstein (2020).<sup>24</sup> First, I present the typology, and then I apply it to the locative components of (non-)literal uses of *sit*.

Here, I assume that there are three possibilities of a locative which follows the verb in the surface order: (i) locative argument, (ii) locative adverbial, and (iii) locative predicate. An example of the first type is in (29), where the locative PP is boldfaced.

(29) I put the glass **on the table**. [ Rothstein 2020, p. 613 ]

The locative in (29) is the goal of the verb *put*. Rothstein argues that it is clearly an argument, based on the ungrammaticality when it is removed.<sup>25</sup> In (30), examples with *put*, as well as the similar verbs *place* and *leave* are shown.

- (30) a. I put the glass \*(on the table).  
 b. John placed the book \*(on the table).  
 c. Bill left his keys \*(on the table).

[ from Rothstein 2020, pp. 615–617 ]

For all three verbs in (30), it is no longer well-formed without the locative PP, indicating that such material is required by the verb. These verbs are thus triadic predicates, selecting for an agent, e.g., *I/John/Bill*, a theme, e.g., *the glass/the book/his keys*, and a locative goal, e.g., *on the table*. In other words, as a result of the agent's action, the theme must be located at the goal at the end of the eventuality.

<sup>24</sup>Note that while the arguments in Rothstein (2020) are based on place locations, she points out in FN9 that her proposal for the denotation of a location can easily be extended to paths, considering that the internal structure of a path contains a place (s.a. Zwarts & Winter 2000; Kracht 2002; Gehrke 2008). This thesis is not concerned with the internal structure of locations, so besides the observation in §5.3.1 that stative paths are possible with the literal use, I leave aside further details of this.

<sup>25</sup>In the original text, the sentences are marked with '#', and not '\*'. However, because these markings reflect syntactic, not semantic, well-formedness, I use the latter marking.

These locative arguments in (30) are different from locative adverbials. The latter, also known as locative adjuncts or eventuality modifiers, are not necessary for the well-formedness of the sentence. There are different possible scopes; the one relevant to present discussion is where the adjuncts locate the entire eventuality.<sup>26</sup> In (31), both types are presented in a single sentence; the locative argument is boldfaced and the locative adjunct is underlined.<sup>27</sup>

(31) John put flyers **in mailboxes** in the north side of town.

[ Rothstein 2020, p. 616 ]

The two locative PPs in (31) have different applications: The boldfaced argument denotes the goal of the putting-flyers eventualities; that is, at the end of each of these eventualities, there is a flyer in the various mailboxes. The underlined adjunct describes where the putting-flyers-in-mailbox eventualities took place, i.e., in a particular part of town. The adverbial will not be found in any verb's argument template.

These semantic contrasts are also found in their relative syntactic hierarchy: the locative argument is generated lower than the locative adjunct. Rothstein (2020) demonstrates the difference in base position of these location types by comparing their behaviour with subject-oriented depictives.<sup>28</sup> As is discussed in §5.4.1–5.4.2, there are two types of depictives, subject- and object-oriented ones, which are differentiated by the eventuality participant to which they ascribe a property. They are both VP-internal adjuncts, and the former adjoins higher than the latter. Relevant to the present discussion about locations is the fact that an adverbial location modifying the entire eventuality is higher in the syntax than a location which is the argument of the verb, and that a subject-oriented depictive can be inserted between the former and the verb but not the latter and the verb. This is illustrated in (32)–(33), with the locations boldfaced and the depictives underlined.

<sup>26</sup>See, for example, Maienborn (2001), who proposes a type of locative modifier called an “external locative modifier”, which locates the entire eventuality and is VP-internal. This external modifier is higher than her “internal locative modifier”, which modifies only a part of the eventuality. Both are shown in (i).

(i) *Maienborn's external vs. internal locative modifiers*

a.	Eva signed the contract <b>in Argentina</b> .	EXTERNAL
b.	Eva signed the contract <b>on the last page</b> .	INTERNAL

[ Maienborn 2001, p. 191 ]

<sup>27</sup>There is another reading, where the flyers are only put into mailboxes on the north side of town. In this case, the locative modifies the location of the mailboxes, not the eventuality.

<sup>28</sup>Even though in the text, Rothstein (2020) claims that subject-oriented depictives are found outside the VP, it is generally assumed that these depictives adjoin VP-internally. I follow this general assumption and show arguments in favour of it in §5.4.2.

(32) *Locative adjuncts and subject-oriented depictives*

- a. John danced **in the park** drunk.  
 b. John danced drunk **in the park**.

(33) *Locative arguments and subject-oriented depictives*

- a. John put the car **in the garage** drunk.  
 b. #John put the car drunk **in the garage**.

[ After Rothstein 2020, p. 617 ]

The sentences with the adjunctive location in (32) can have a subject-oriented depictive, describing John as drunk during the dancing eventuality, either before or after the location. In contrast, in the sentences with the argument location in (33), the subject-oriented depictive can only appear after the location. In the infelicitous sentence in (33-b), a reading that arises is the car is drunk, which is semantically odd; if the depictive described something more typical of cars, such as *smashed*, then the sentence would be well-formed. The data in (33) suggest that a locative PP which is the argument of a verb has a base position at or below V. In contrast, the adverbial location in (32) attaches above V, similar to a subject-oriented depictive. Its inclusion provides more information about the eventuality but it is not obligatory for well-formedness.

The third possibility of a locative PP is a locative predicate.<sup>29</sup> This type resembles the argument one, as the predicative location is also obligatory for well-formedness. Using a variation on (24), the sentences in (34) show that the locative is required for well-formedness of an argument locative and a predicative locative.

(34) *Two obligatory locations*

- a. Peter put the cat **\*(on the sofa)**. ARGUMENT  
 b. The cat is **\*(on the sofa)**. PREDICATE

However, besides non-optionality, these locations have different characteristics. In (34-a) the argument is a locative goal of the eventuality, as discussed above: the agent causes the theme to end up in the goal. In contrast, in (34-b) the predicate describes the theme, the cat, as being located on the sofa, throughout the entire interval of the eventuality.

A further difference, as Rothstein (2020, FN11) notes, is that a locative argument, like in (34-a), can only be locative in nature. This is different from a postcopular predicate, such as in (34-b). In the case of non-literal *sit*, I assume in this thesis that a predicative copular clause like in (34-b) takes a PredP as its complement (s. §5.2). XP<sub>1</sub> is generated in the specifier of the Pred head, and XP<sub>2</sub>, here a PP, is generated in the complement of Pred. As indicated by the XP label, there is no specification of lexical category for XP<sub>2</sub>, only that it is a predicate and not an entity. The interchangeability of predicates, not arguments, is shown using an AP, *fluffy* in (35).

<sup>29</sup>In this section, I follow the terminology of Rothstein (2020) and use the term “argument” to refer to locations, which are internal arguments of the verb, and differentiate them from “predicates”, which are generated within PredP. Technically a predicative location is an argument of Pred; the important difference is that the predicative location is not an argument of the verb itself.

- (35) *Only locative arguments are constrained to locations*
- a. Peter put the cat (**on the sofa**|#fluffy). ARGUMENT
- b. The cat is {**on the sofa**|fluffy}. PREDICATE

In (35-a), the locative argument is subcategorised by the verb, and therefore cannot be replaced by an adjective. In contrast, in (35-b), the locative predicate only ascribes a property to the subject; this property can be adjectival as well as locative. The three types of locatives are summarised in Table 5.2.

TABLE 5.2: Three different types of locatives: A summary

Type	Figure	Optional?	Loc only?	Examples
<b>Argument</b>	entity	no	yes	(29),(30),(31),(33), (34-a),(35-a)
<b>Adverbial</b>	eventuality	yes	–	(31), (32)
<b>Predicate</b>	entity	no	no	(24),(34-b),(35-b)

The first column of Table 5.2 enumerates the types, and the second column describes what is the figure, i.e., what the locative PP locates with respect to its ground. The third column indicates obligatoriness/optionality of the locative type. The next column describes whether the locative can be replaced by, e.g., an AP, as we saw in (34). Note that the row of the adverbial location is marked with a dash, because while it is technically possible for another lexical category to be an adjunct, the optionality of the expression means that the variation is less consequential than for the other two types. The final column refers to the examples where each type appeared in the above discussion.

After this theoretical background, we now turn to the locative types that appear with both uses of *sit*, matching the type based on the information in Table 5.2. The two different uses of *sit* can be seen in (36), with the optionality of the location tested for each use.

- (36) *Differences in locative PPs*
- a. Michela sat (on the floor). LITERAL
- b. *The Book of Disquiet* sat \*(on the floor). NON-LITERAL

The pattern seen in (36) already suggests that the literal use's locative is an adjunct, and that the non-literal one is either an argument of the verb or a predicate, generated within PredP; this is additionally in line with what we have seen so far in the examples first introduced in §2.1.2 and seen again in (1) in the present chapter's introduction.

The dichotomy between the two uses is also reflected in what the locative PP locates, an empirical observation which has not yet been introduced in this thesis. The paraphrases in (37) illustrate.

- (37) *Differences in locative PPs*
- a. Michela sat (on the floor). LITERAL  
'Michela maintained a sitting position (and the sitting eventuality was located on the floor).'

- b. *The Book of Disquiet* sat \*(on the floor). NON-LITERAL  
 ‘*The Book of Disquiet* was located on the floor.’

While both locative PPs in (37) refer to a location, they locate different semantic components. In (37-a), the literal verb denotes a stative<sup>30</sup> eventuality of a female person being in a sitting position sometime before the utterance time. The locative PP serves to locate this eventuality on the floor. In (37-b), the non-literal verb does not denote anything about the position or location of the subject. Instead, the locative PP locates the subject referent—not an eventuality—on the floor; non-literal *sit* takes an eventive property denoted by PredP and adds the ‘stationary’ entailment.

Although it seems clear that the locative PP in the literal use is adjunctive, we still must differentiate between the argument type and the predicate type for the non-literal use’s locative PP. From the discussion above, summarised in Table 5.2, we know that one difference lies in the interchangeability of the lexical category: argument locatives must be a locative, while predicative locatives can also be, e.g., adjectival. Other accounts which looked at the non-literal uses of posture verbs describe these uses as primarily locative in nature and that they have locative arguments (s. §2.3.1–2.3.2). Naturally-occurring sentences from the synchronic corpus studies, reported in Chapter 3, and constructed ones in the discussion of subject types in §4.1, demonstrate that the non-literal use can appear with a postverbal adjective. An example from Corpus Study I is in (38), with the adjective boldfaced.

- (38) Some of their biggest metro Atlanta developments are sitting **empty**, but the Russell brothers, partners in H.J. Russell & Co., are weathering the downturn in construction with their firm’s diversified portfolio. [COCA]

The sentence in (38) contains a non-literal use of *sit*. Previous authors’ accounts on non-literal *sit* would predict that the postverbal material is locative (s. §2.3.1–2.3.2), but in (38) there is no postverbal locative. Instead, *empty* appears postverbally, and while it is not the most common combination, there are more examples in the corpus studies of Chapter 3 with postverbal adjectives instead of postverbal locations. The flexibility of the postverbal category suggests that the locative PP with non-literal *sit* is actually a predicate, which means it is generated within PredP and it is not an argument of non-literal *sit*. This contradicts the previous literature, including my own work (Fraser, 2016, 2018). In this thesis, I analyse the postverbal category of the non-literal use as predicates, generated in a PredP. My assumptions about PredPs were outlined in §5.2, and in the next subsection I describe an option for formally representing predicative locations. Postverbal APs are addressed below in §5.4.

<sup>30</sup>As it has been noted in Chapter 2, it is also possible to have a dynamic reading of the simple past sentences. For (37-a), this would mean the referent of *Michela* actively put herself into a sitting position. Either way, the locative PP is still an adjunct.

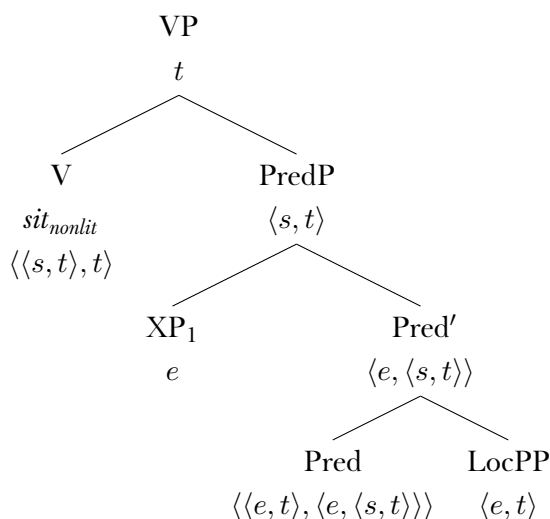
### 5.3.3 Postverbal locations, formally

The previous subsection has shown that, despite the similar surface structure of the literal and non-literal uses, the underlying structure differs across the divide. In this subsection, I give the formal representations of the two relevant location types:<sup>31</sup> the predicate which combines with PredP in the non-literal use and the adjunct which combines with the literal use. Example sentences for each use are in (39).

- (39) a. The book was sitting on the bed. NON-LITERAL  
 b. The cat was sitting on the bed. LITERAL

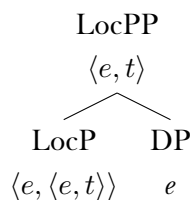
In §5.2, I presented my structural assumptions for each use of *sit*; non-literal *sit* is at V and takes PredP as its complement. This is illustrated in (40), for a locative postverbal component.

#### (40) The semantic types of non-literal *sit*'s structure



Within PredP, the functional head Pred requires a complement which is a property-denoting expression (s.a. §5.1.2), represented in (40) as LocPP, and expanded upon in (41). The locative preposition is represented in [spec, LocPP] as “LocP”, and the noun argument of that preposition is the sister DP.

#### (41) A semantic tree for predicate locations



<sup>31</sup>In this subsection I present two different denotations for the two types of locations, which might appear to be suggestive of two different lexicon entries for prepositions. To avoid this, one could assume functions which type-shift the ground type from an individual to a region that then selects for either an individual or an eventuality. To go into such detail would be orthogonal to this dissertation's main goal of accounting for the lexical semantics of *sit*, so I am abstracting away from the details of the semantics of each particular preposition, and how exactly a location is to be defined. For accounts concerning these points (pun intended), I refer the reader to, e.g., Zwarts & Winter (2000); Kracht (2002); Gehrke (2008); Zwarts (2017); Rothstein (2020).

The locative preposition, represented in (41) as *LocP*, introduces a localisation relation. This function, called here **loc-of** relates the figure to the ground, and is simplified from the function *loc* in Rothstein (2020).<sup>32</sup> In the simplified denotation in (42), the variables  $x$  and  $y$  represent the figure and the ground, respectively. Namely, within the locative phrase, only  $y$ , representing the ground, is saturated;  $x$ , representing the figure, is saturated only after combination with the subject, the sister of *Pred*.

(42) *Denotation of LocP*

$$\llbracket \text{LocP} \rrbracket = \lambda y_e . \lambda x_e [\mathbf{loc-of}(x, y)] \quad \langle e, \langle e, t \rangle \rangle$$

A locative preposition, “*LocP*”, is a function describing an individual as being located with respect to the other individual; that is it describes the location of the figure with respect to the ground. In the case of a predicative locative like *on the bed* in (39-a), *on* is represented by *LocP*, and *the bed* would saturate the argument represented by  $y$ . A sample derivation of the prepositional phrase, “*LocPP*”, is in (43), for *on the bed*.

(43) *Deriving LocPP*

- a.  $\llbracket \text{the bed} \rrbracket = b$   $e$
- b.  $\llbracket \text{on} \rrbracket = \lambda y_e . \lambda x_e [\mathbf{loc-of}(x, y)]$   $\langle e, \langle e, t \rangle \rangle$
- c.  $\llbracket \text{on} \rrbracket (\llbracket \text{the bed} \rrbracket) = \lambda x_e [\mathbf{loc-of}(x, b)]$   $\langle e, t \rangle$

In (43), *the bed* is represented by  $b$  in (43-a). The denotation of the locative preposition, *on*, is in (43-b), and it contains the locative function **loc-of**. This is a two-place relation, selecting for two different entities of type  $e$ ; it applies to the variables, first the ground,  $y$ . This is shown in (43-c), where **loc-of** applies to the internal argument *the bed*,  $b$ . The next step in the derivation involves combining the *LocPP* node with its sister, *Pred*, the predicative head of *PredP*, where an event argument is also introduced (s. §5.2). The result of this combination is then combined with the figure DP, thereby saturating  $x$ . This next step is shown in (44).

(44) *Deriving PredP*

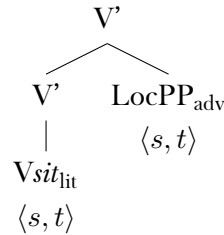
- a.  $\llbracket \text{on the bed} \rrbracket = \lambda x_e [\mathbf{loc-of}(x, b)]$   $\langle e, t \rangle$
- b.  $\llbracket \text{Pred} \rrbracket = \lambda P_{\langle e, t \rangle} . \lambda x_e . \lambda e_s [\text{THEME}(x, e) \wedge P(x)]$   $\langle \langle e, t \rangle, \langle e, \langle s, t \rangle \rangle \rangle$
- c.  $\llbracket \text{Pred} \rrbracket (\llbracket \text{on the bed} \rrbracket) = \lambda x_e . \lambda e_s [\text{THEME}(x, e) \wedge \mathbf{loc-of}(x, b)]$   $\langle e, \langle s, t \rangle \rangle$
- d.  $\llbracket \text{the book} \rrbracket = k$   $e$
- e.  $\llbracket \text{Pred on the bed} \rrbracket (\llbracket \text{the book} \rrbracket) = \llbracket \text{PredP} \rrbracket =$   
 $\lambda e_s [\text{THEME}(k, e) \wedge \mathbf{loc-of}(k, b)]$   $\langle s, t \rangle$

<sup>32</sup>The difference being that I abstract away from the details of regions, while Rothstein (2020) does not (s.a. FN 31). Her account involves a type-shifting operation triggered by the preposition: Prepositions denote functions from regions to regions. So that the ground DP can combine with the preposition, an operation is introduced to map individuals onto a region, also known as the individual’s EIGENPLACE (Wunderlich, 1991). An example is the phrase *on the bed*, where the ground is the bed and the figure is interpreted as being located within the surface region of that bed. This is in contrast to, e.g., *under the bed*, where the figure would be located with respect to the area underneath that bed.

As can be seen in (44), PredP mediates a relation between the subject, here *the book*, and a property, here being located on the bed. This output of PredP then combines with non-literal *sit*, where the ‘stationary’ entailment is introduced and the event argument bound.

Now we turn to the denotation of the location type which combines with literal *sit*. The tree for literal *sit* is in (45), with the LocPP being adjoined at V’ via predicate modification.

(45) The structure of literal *sit*



I follow Rothstein (2020) in using a two-place relation similar to **loc-of**, called **scene-of**, mirroring the nomenclature of Rothstein’s **scene** function, however the corresponding locative preposition will simply have a subscript “adv” labelling it as an adjunctive, or adverbial, location, so as to avoid introducing too much novel nomenclature. As can be seen in (46), the **scene-of** function selects for an individual, the ground, and an eventuality. Note that a major difference between the LocPP combining with literal and non-literal *sit* is that in the former an eventuality is introduced within LocPP, while in the latter an eventuality argument is introduced with Pred.

(46) Denotation of  $\text{LocP}_{\text{adv}}$

$$\llbracket \text{LocP}_{\text{adv}} \rrbracket = \lambda y_e. \lambda e_s. \text{scene-of}(e, y) \quad \langle e, \langle s, t \rangle \rangle$$

The denotation in (46) differs from the one in (42), for a predicative location, in that the second argument to be saturated is an event, of the type  $s$ , not an individual  $e$ . In (47), a sample derivation with the same locative PP as before, *on the bed*, is shown.

(47) Deriving  $\text{LocPP}_{\text{adv}}$

- a.  $\llbracket \text{the bed} \rrbracket = b$   $e$
- b.  $\llbracket \text{on} \rrbracket = \lambda y_e. \lambda e_s [\text{scene-of}(e, y)]$   $\langle e, \langle s, t \rangle \rangle$
- c.  $\llbracket \text{on} \rrbracket (\llbracket \text{the bed} \rrbracket) = \lambda e_s [\text{scene-of}(e, b)]$   $\langle s, t \rangle$

The denotation of the ground, *the bed*, is the same in (47) as it is in (43-a): it is represented as  $b$ . In (43-b), the simplified function representing the spatial preposition, *on*, now selects for an individual and an eventuality, instead of two individuals. This is important for the adjunctive location, which modifies the sitting eventuality. That is, a  $\text{LocPP}_{\text{adv}}$  such as in (47-c) combines via predicate modification with literal *sit*, which also denotes a set of eventualities; crucially, the composition of the verb itself is not altered. The resulting meaning is that the sitting eventuality is located somewhere.



In sum, the characteristics of the postverbal location is examined for both the literal and non-literal uses of *sit*, building on the identification of location type in the previous subsection, §5.3.2: the optional location of the literal use, i.e., lexical verb, is an adjunct; in contrast, the obligatory status of location with the non-literal use, i.e., a copular verb, which means that it is not an adjunct. In addition, the location of non-literal *sit* is not an argument, because it can be substituted for an adjective, as has been corroborated in Chapter 3. Instead, I claim in this thesis that this location is predicative, and it is introduced in the PredP, complement of the copular verb. The present subsection showed how both predicative locations and locative adjuncts can be represented. The next section, §5.4 addresses the postverbal adjectives of both uses. There, I show structural differences between the literal and the non-literal uses' adjective types that mirror the structural differences seen in this section with locative types.

## 5.4 Postverbal adjectives

The previous section established the differences between the locations which appear with the literal use and the ones which appear with the non-literal use. The optional ones appearing with the former are adjuncts and modify the entire eventuality encoded by the verb, while the obligatory ones appearing with the latter use are predicates and are generated in the PredP, which is a complement of the verb. In the present section, we turn to postverbal adjectives, which can appear with both uses as well as have similar structural characteristics.

The accounts reviewed in §2.3 assume that posture verbs encode spatial relations and that the non-literal uses always require a postverbal locative for well-formedness. However, in Chapter 3, the naturally-occurring sentences found in the synchronic corpus studies demonstrated that postverbal locatives are not the sole postverbal category appearing with non-literal *sit*. Namely, adjectives can appear instead of those locative phrases, contradicting previous theory, including my own work (Kaufmann, 1995; Maienborn, 2005; Rothmayr, 2009; Fraser, 2016, 2018). In §5.1–5.2 I argued that the postverbal XPs are main predicates which combine with the non-literal use of *sit*, a copular verb; consequentially there is not a locative-category constraint on the XP (s. theory in §5.3.2, and data in Chapter 3). As is later proposed in §7.1, these postverbal adjectives play an important role in the diachronic analysis, as the structure of *sit* sentences with these adjectives were reanalysed from having a lexical verb to having a copular verb.

The present section addresses two main points: (i) the syntactic status of the adjective differs between the two uses, paralleling the locatives' differences described in §5.3, and (ii) the semantic type of adjective is constrained in a similar way for both uses. The examples in (48)–(49) introduce data to point (i), i.e., there is a difference in that the adjective can be omitted for the literal use, and is obligatory for the non-literal use. A cup-type subject is used to represent the non-literal use.

(48) *Grammatical status of the postverbal adjective*

- |    |  |             |
|----|--|-------------|
| a. | The kids were sitting (dirty abandoned).   | LITERAL     |
| b. | The books were sitting *(dirty abandoned). | NON-LITERAL |

This difference in optionality stems from the structural definition dividing the two uses: the literal use comprises a full lexical verb and the adjective is omissible, whereas the non-literal use comprises a copular verb and the adjective is non-omissible. The dichotomy seen in (48) is parallel to the one seen with locations in §5.3, in that the literal use combines with adjuncts and the non-literal use combines with an obligatory predicative component. Another way to think about it is that the adjective is the secondary predicate with the literal use and the primary predicate with the non-literal use. In §5.4.1–5.4.2, background theory on secondary predicates is presented, confirming this status of the adjective in the literal use.

Regarding point (ii) from above, the content of eligible adjectives are constrained in the same way across both uses. This is exemplified in (48), with the eligible adjectives *dirty/abandoned*, and in (49), with the ineligible adjective *boring/intelligent*.

(49) *Incompatible postverbal adjectives*

- |    |   |             |
|----|---|-------------|
| a. | #The kids were sitting {boring intelligent}.  | LITERAL     |
| b. | #The books were sitting {boring intelligent}. | NON-LITERAL |

In the sentences in (48)–(49), the distribution of adjectives is similar across the two uses. Namely, the compatible adjectives in (48) are predicated of the subjects at the reference time, and they do not describe the referents of *the kids/the book* as habitually being dirty or abandoned. If the incompatible adjectives in (49) were felicitous, they would predicate a more habitual, or longer-lasting property; being boring or being intelligent are properties that cannot be changed quickly, but rather stay with the property holder for a long time. After discussing adjectives with the literal use specifically, two perspectives on this distinction are presented, applicable to both uses: the traditional stage-/individual level view in §5.4.3 and another one concerning two different types of comparison classes in §5.4.4. The formal implementation of the latter is presented in §5.4.5.

#### 5.4.1 Postverbal adjectives with literal *sit*: Depictive predicates

This subsection only concerns theory relevant to postverbal adjectives in the literal use, a lexical verb. Because *sit* is the main predicate in the literal use, I argue in this thesis that postverbal adjectives in combination with literal *sit* are depictive secondary predicates. In present subsection, the definition of a depictive secondary predicate is given by comparing it with other phenomena: first, with resultative secondary predicates, then adverbials. After this comparison, eligible adjectives of depictive predicates generally are discussed, and I show that postverbal adjectives combining with literal *sit* adhere to the criteria of a depictive. Following these descriptive generalisations, the subsequent subsection presents formal assumptions about depictives.

A secondary predicate, as suggested by its name, predicates something of a participant of the main eventuality, even though it is not the main predicate of a sentence. Typically in the literature on secondary predicates, two subtypes are discussed: depictives and resultatives (Halliday, 1967; Rothstein, 2003, 2011; Winkler, 1997/2011; Schultze-Berndt & Himmelmann, 2004; Himmelmann & Schultze-Berndt, 2005a; Schultze-Berndt, 2017, a.o.).<sup>33</sup> First, I compare the two types of secondary predicates, then concentrate on features of depictives only; following this, I compare depictives to adverbials and other adjunct types.

The sentences in (50) provide an example of a depictive and a resultative. One difference between the two types is that depictives can be object- or subject-oriented, while resultatives are strictly object-oriented.<sup>34</sup>

(50) *Object-oriented secondary predicates in English*

- |    |   |             |
|----|---|-------------|
| a. | Natasha drank her coffee; <b>black</b> <sub>i</sub> . | DEPICTIVE   |
| b. | Natasha painted the chair; <b>red</b> <sub>i</sub> .  | RESULTATIVE |

Only in (50-a) does the boldfaced property hold for the direct object throughout the whole eventuality.<sup>35</sup> That is, in (50-a) the coffee was without sugar or milk, at least at the beginning and during the entire drinking eventuality. In contrast, in (50-b), the boldfaced property is caused by the eventuality described by the main predicate. That is, in (50-b) the chair was not red at the beginning of the painting eventuality; it became red at the end. It is also possible to understand the sentence as ‘the painting-the-chair eventuality ended once the chair was red’: the attainment of the result state expressed by the boldfaced secondary predicate ends the eventuality of the main predicate.

The timelines in Figure 5.1 illustrate the different temporal intervals of when a depictive like in (50-a) or resultative like in (50-b) is true, in relation to when the respective main predicate is true. For each, the secondary predicate’s eventuality, the state in which the relevant property holds, is represented by  $e_1$  in the red rectangle above the arrow representing the progression of time  $t$ , and the main predicates’ eventuality is represented by  $e_2$  in the blue rectangle below the arrow.

FIGURE 5.1: Illustration of temporal intervals in secondary predicates

- (A) The temporal overlap of a depictive, (B) The temporal sequence of a resultative, as in, e.g., (50-a)



<sup>33</sup>Another type is also sometimes discussed, called circumstantial. However, I follow, e.g., Schultze-Berndt & Himmelmann (2004) and consider it to be a subtype of depictives.

<sup>34</sup>For clarity, the co-indices are provided in these and other sentences, and the secondary predicate is boldfaced. These co-indices are not indicative of assumptions about any particular control theory.

<sup>35</sup>Although the depictive in (50-a) could technically have a subject-orientation, it is not the most salient reading; I provide examples of subject-oriented depictives later in the subsection.

Figure 5.1A illustrates the temporal overlap of a depictive predicate utterance, such as the one we saw above in (50-a). The dashed lines at each end of  $e_1$ 's rectangle represent the possibility that the property encoded by the depictive can be true for an interval longer than the interval of the main predicate's eventuality. A defining feature of depictives is that the temporal interval of  $e_1$  wholly includes  $e_2$ , regardless of what happens before or after  $e_2$ 's interval. For example, the coffee in (50-a) was most likely in the 'being black' state,  $e_1$ , before the referent of *Natasha* began the drinking-coffee eventuality,  $e_2$ . This is in contrast to resultatives, where the temporal interval of  $e_1$  only minimally, if at all, overlaps the end of  $e_2$ 's interval, as illustrated in Figure 5.1b for (50-b). In this way, resultatives represent temporal sequence.

The temporal constraint unambiguously distinguishes the secondary predicate types in (50). An example of an ambiguous secondary predicate is in (51).

(51) Jane shot the pigeon<sub>i</sub> **dead**<sub>i</sub>.

The boldfaced predicate in (51) can be interpreted to be predicated of the pigeon in two different ways, depending on whether there is temporal overlap (Figure 5.1a) or temporal sequence (Figure 5.1b). If the pigeon was already dead when Jane started shooting, i.e., if there is temporal overlap of the shooting eventuality and the being-dead state, *dead* is interpreted as a depictive. In Figure 5.1a, this would mean that the box of  $e_1$  is longer on both sides than the box of  $e_2$ . On the other hand, if the pigeon only died after she shot it, i.e., if there is temporal sequence of a shooting eventuality and then a being-dead state, *dead* is interpreted as a resultative. This is represented in Figure 5.1b, where  $e_1$  is the shooting eventuality and subsequent  $e_2$  the being-dead state.

Unlike resultatives, depictives can be predicated of subjects as well as direct objects. This is illustrated in (52).

(52) *Subject-oriented depictive predicate*

Jim<sub>i</sub> watched TV **sad**<sub>i</sub>. DEPICTIVE

In (52) the subject referent of *Jim*, is ascribed the property of being sad at the time—and duration—of the watching-TV eventuality. However, a TV cannot be sad, so an object-orientation is not possible for (52). Because only depictives can be subject-oriented, there can only be an ambiguity with respect to participant orientation for depictives and not resultatives. This is shown in (53).

(53) *Only depictives can be ambiguous in their participant orientation*

- a. Jim<sub>i</sub> fed the dog<sub>j</sub> **hungry**<sub>i/j</sub>. DEPICTIVE  
 b. Jim<sub>i</sub> scrubbed the dog<sub>j</sub> **clean**<sub>\*i/j</sub>. RESULTATIVE

In (53-a) either the subject referent of *Jim*, or the object referent of *the dog* can be in a state of being hungry during the feeding-the-dog eventuality. This is in contrast to the resultative in (53-b), where only the object referent of *the dog*, can be in a state of being

clean—and this state begins after the scrubbing-the-dog eventuality. That is, if Jim is clean, then the only possible reading is a depictive one.

Another phenomenon which depictives resemble but from which they are distinct is adverbials (Halliday, 1967; Schultze-Berndt & Himmelmann, 2004; Riaubiené, 2016, a.o.). Differences in entailment show this clearly, as is illustrated in the sentences in (54).

(54) *Entailment differences between depictives and adverbials*

- |    |  |           |
|----|--|-----------|
| a. | The child <sub>i</sub> left the birthday party <b>reluctant</b> <sub>i</sub> ,   | DEPictIVE |
|    | ... #although she was actually happy to leave.                                   |           |
| b. | The child <sub>i</sub> left the birthday party <b>reluctantly</b> <sub>i</sub> , | ADVERBIAL |
|    | ... although she was actually happy to leave.                                    |           |

[ After the discussion in Schultze-Berndt & Himmelmann 2004, p. 60 ]

Even though both contain a participant-oriented item, *reluctant(ly)*, the sentences in (54-a) and (54-b) differ in their entailments, seen in the difference in felicity of the continuations. As a depictive predicates a property of a participant in an eventuality, it requires this property to be true of the individual during the eventuality. In (54-a), the depictive form is incompatible with a simultaneous description of a contradictory property: the child cannot be both happy to leave and reluctant to leave. An adverbial modifies the eventuality instead of predicating a property of a participant. In this way, it is only important that the manner of the subject referent in (54-b) looks as if they are reluctant; the child actually could be pleased to depart.

So far, we know that depictives meet the following criteria. (i) There is temporal overlap of eventualities described by the main and depictive predicates. (ii) The depictive describes a property of a participant in the eventuality. Now we turn to the question of which types of predicates can be depictives.

The depictive expresses a property of the subject referent and this property cannot be an inherent one (Geuder, 2004; Rothstein, 2011). See the differences in (55).

(55) *Depictive predicates cannot describe an inherent property*

- |    |  |
|----|--|
| a. | Mary <sub>i</sub> met John <sub>j</sub> ( <b>drunk</b> /* <b>tall</b> ) <sub>i/j</sub> . |
| b. | I eat tomatoes <sub>i</sub> ( <b>fresh</b> /* <b>non-synthetic</b> ) <sub>i</sub> .      |

[ Adapted from Rothstein 2011, p. 220 ]

In (55-a), only *drunk* and not *tall* is possible as a depictive predicate. This is because a person is not inherently drunk, i.e., this is typically a temporary property, while a person is inherently tall and in adulthood does not change height. Similarly in (55-b), a tomato is not inherently fresh, in that it is only fresh for a short period, while it is (non-)synthetic since the beginning of its existence and this does not change. Some authors also make a distinction between stage- and individual-level predicates (McNally, 1993; Filip, 2001; Rothstein, 2003), on which I present more background in the next subsection.

Besides being non-inherent properties, the eligible adjectives can also be generalised as typically a “a physical or psychological state or condition [...] including bodily posture” (Schultze-Berndt & Himmelmann, 2004, p. 63). The sentences in (56) illustrate.

(56) *Semantic range of depictives: some examples*

- a. Phil<sub>i</sub> ran across the yard **barefoot**<sub>i</sub>.
- b. Phil<sub>i</sub> watched the finale **agape**<sub>i</sub>.
- c. After lying on the sofa for the last episodes, Phil<sub>i</sub> watched the finale **upright**<sub>i</sub>.

The utterance in (56-a) contains a motion verb, *run*, and a description of a physical state, ‘being barefoot’. The utterance in (56-b) contains a perception verb, *watch*, and a description of a psychological state, ‘being agape’. The utterance in (56-c) contains the same perception verb, *watch*, and a description of a body posture, *upright*. In all three sentences, the depictive item is predicated of the subject referent, *Phil*.

One last criterion often put forth in the literature is optionality of the depictive predicate. This characteristic distinguishes depictives from, e.g., predicate complements (s.a. discussion about the syntactic status of locatives in §5.3.2). Data such as in (57) is taken to be evidence for the adjunct status of depictive predicates (Schultze-Berndt & Himmelmann, 2004).<sup>36</sup>

(57) *Depictive predicates are optional*

- |    |   |            |
|----|---|------------|
| a. | She drank her coffee ( <b>black</b> ).      | DEPictive  |
| b. | She preferred her coffee *( <b>black</b> ). | COMPLEMENT |

Both sentences in (57) contain *black*, but its grammatical status is different in each. The depictive predicate in (57-a) can be omitted without violating the grammaticality of the sentence, indicating that *black* is an adjunct. In contrast, without *black* (57-b) is ungrammatical,<sup>37</sup> indicating that *black* is obligatory as a predicative complement.

In sum, in order for an expression to be considered a depictive predicate, four core criteria must be met. First, there must be temporal coincidence of the intervals of the depictive and the main predicates. Second, the depictive must predicate a property of a participant

<sup>36</sup>In the syntactic literature, it is common to discuss adjuncts with respect to the Condition on Extraction Domains (Huang, 1982), which dictates that adjuncts are closed islands prohibiting extraction. However, as was first pointed out by Demonte (1987/1988), depictive secondary predicates defy this generalisation. Although her observations are based on Spanish data, they can be extended to English, such as in the sentences in (i). For further discussion and analysis, see, e.g., Borgonovo & Neeleman (2000), Truswell (2007), and Fábregas & Jiménez-Fernández (2016).

(i) *Extraction out of a depictive adjunct*

- a. At whom did Phil return [ angry ~~at whom~~ ]?
- b. To what did Phil return [ addicted ~~to what~~ ]?

<sup>37</sup>There is another interpretation of (57-b), where *her* is in focus, such as in (i). In this case, no predicative complement is necessary. (Thanks to Yasutada Sudo, p.c., for suggesting this alternate interpretation.)

(i) James prefers the coffee from the mall to his own, but Flora prefers HER coffee.

in the eventuality. Third, the property being predicated must be non-inherent, which correlates with an interpretation of the property of a temporal one. Finally, the depictive is not the main predicate of the clause, but rather an adjunct.

Let us now look at whether the postverbal adjectives that combine with literal *sit* pattern like depictive secondary predicates. The sentences in (58) will be used for discussion.

(58) Jim was sitting {**drunk**|**happy**|**barefoot**}. DEPICTIVE

Moving backwards through the criteria, and therefore beginning with the fourth criterion, we can already see that the lexical verb, literal *sit* is the main verb and the adjective is secondary. The sentences in (59), additionally show that the postverbal adjectives are optional.<sup>38</sup>

(59) Jim was sitting (**drunk**|**happy**|**barefoot**). DEPICTIVE

The third criterion, that the compatible adjectives are non-inherent properties. The predicates *drunk*, *happy*, and *barefoot* all meet this criterion. As was shown in (49) in the introduction to this section, inherent properties such as being intelligent or tall are incompatible as postverbal adjectives with *sit*. Similar sentences can be seen in (60).

(60) #Jim was sitting {tall|intelligent}.

The second criterion, concerning a property predicated of a participant, is demonstrated with entailment patterns in (61). For literal *sit*, an intransitive verb, the only eligible depictive predicates are subject-oriented.

(61) *Entailment patterns with sit's depictive predicates*

- a. Jim was sitting **drunk**, #but he was actually sober.
- b. Jim was sitting **happy**, #but he was actually upset.
- c. Jim was sitting **barefoot**, #but he was actually wearing shoes.

In (61), the participant is the referent of *Jim*, and these properties are being predicated of him. This amounts to the postverbal predicates not being analysed as, e.g., adverbials. In addition, the referent of *Jim* is described to have the properties drunk/happy/barefoot during the same, and entire, interval as the sitting eventuality. This is in contrast to resultatives, which describe temporal sequence, not temporal coincidence, i.e., the first criterion of a depictive predicate.

I take the above arguments as evidence that the postverbal adjectives combining with literal *sit* are depictive predicates. In the next subsection, my formal assumptions of depictive predicates are given, including arguments about their information structural effect in a sentence.

<sup>38</sup>See also (48) in the introduction to this section.

### 5.4.2 Formal details about depictive predicates

In this subsection, I give a brief overview of the formal analyses of depictive predicates and then I discuss the information-structural perspectives on depictives. The former part informs the latter; the latter additionally includes remarks on postverbal locations co-occurring with depictives, and its effect on information structure. The latter part will be relevant again later for the diachronic analysis of *sit* in §7.1.

Considering the criteria for depictive predicates put forth in the previous subsection, I assume that the depictive forms, semantically, a complex predicate with the verb: the two eventualities, that of the depictive and that of the verb, are cotemporaneous. According to Rothstein (2004), these two eventualities are summed, forming one event; the prerequisites of this summing operation reflect some of the criteria discussed in §5.4.1: shared participant and cotemporaneous runtime. In the subsequent subsections, I delve deeper into the semantics of the adjectives eligible as depictive predicates, while in the present one the discussion concentrates on syntactic details relevant to information structure.

Nowadays authors usually assume that depictive predicates are VP-internal adjuncts, although this was a matter of debate in the earlier literature (s. overviews in, e.g., Winkler 1997/2011; Himmelmann & Schultze-Berndt 2005a; Rothstein 2011). Evidence for the VP-internal position can be seen in constituency tests such as VP-preposing in (62)–(63).<sup>39</sup> In these sentences, the preposed verb phrase is underlined and the depictive predicate is boldfaced in that clause.

- (62) Anne said that Chris would go to bed tired and ... SUBJECT-ORIENTED  
 a. ... go to bed **tired** he did.  
 b. \*... go to bed he did **tired**.
- (63) Mary said that they would burn a woman alive and ... OBJECT-ORIENTED  
 a. ... burn a woman **alive** they did.  
 b. \*... burn a woman they did **alive**.

[ Winkler 1997/2011, p. 27 ]

The grammatical sentences in (62-a) and (63-a) are the ones where the depictive predicate moves with the preposed verb phrase. In contrast, in the sentences in (62-b) and (63-b) the depictive predicate is left behind when the VP is preposed. When the depictive and VP are not the same constituent, the sentence is ungrammatical.

Between the two types of depictive predicates, the point of adjunction has been debated more in the literature for the subject-oriented one.<sup>40</sup> In (64), additional evidence in favour of the VP-internal status of subject-oriented depictives can be seen; this observation is credited to Roberts (1988). The expectation is that the negation has scope over only the entire clause, when the predicate is VP-internal. The VP-external *because* adjunct is displayed in (65), in order to show how this test works with VP-external adjuncts.

<sup>39</sup>Syntactic evidence such as in (62)–(63) is credited to observations in a squib by Andrews (1982), wherein nonsubcategorised, subject-oriented, predicates are argued to be part of VP.

<sup>40</sup>For a detailed overview, see Winkler (1997/2011, §2–3).



In both, the possible interpretations, according to the discussion in Winkler (1997/2011, p. 71), are paraphrased and enumerated.

- (64) Bill didn't [<sub>VP</sub> leave [<sub>AP</sub> angry at John ] ]. VP-INTERNAL  
 a. 'Bill did not leave and was not angry at John.'  
 b. #'Bill did not leave and was angry at John.'
- (65) John didn't [<sub>VP</sub> kiss his wife ] [<sub>S</sub> because he loves her ]. VP-EXTERNAL  
 a. 'It is not the case that John kissed his wife because he loves her.'  
 b. 'John loves his wife so much that he did not kiss her.'  
 c. 'John kissed his wife not because he loves her but for another reason.'

[ Adapted from Winkler 1997/2011, p. 71 ]

As can be seen in the paraphrases of (64), the entire clause, i.e., the main verb and the depictive, can be simultaneously negated, but the main verb in (64) cannot be negated alone.<sup>41</sup> According to Winkler (1997/2011), this demonstrates that the subject-oriented depictive is within VP. In contrast, the negated sentence with the *because*-adjunct in (65) allows three different variations on which constituents are within the scope of negation: both the verb and the adjunct, only the verb, and only the adjunct.

Even though subject- and object-oriented depictives are both considered to be VP-internal, their point of adjunction differs. As is shown in (66), an object-oriented predicate is a sister to V, and a subject-oriented predicate is a sister to V'. In (66), the object-oriented depictive is underlined and the subject-oriented one is boldfaced.

- (66) John [<sub>VP</sub> [<sub>V'</sub> rode the bicycle bent out of shape ] **drunk**. ]

[ Rothstein 2011, p. 1451 ]

Evidence for the varying positions of subject-oriented and object-oriented depictives can be seen in (67)–(68). In contrast to the preposed-VP examples in (62)–(63), the moved phrase in the following sentences is the V constituent only. Like in (66), I have underlined the object-oriented depictives and boldfaced the subject-oriented ones in (67).

- (67) *Operations applied to V, and the difference across depictive types*  
 a. What John did **drunk** was ride the bicycle (bent out of shape).  
 b. What John did was ride the bicycle (bent out of shape) **drunk**.  
 c. #What John did bent out of shape was ride the bicycle.

<sup>41</sup>In the discussion of this example, concentrated on evidence of syntactic positions, there is no mention of an interpretation where only the depictive's content is negated. This interpretation is paraphrased in (i).

- (i) 'Bill left and was not angry.'

In, e.g., Simpson (2005), Heidinger (2018), and Heidinger & Onea (2021), this interpretation is acknowledged. Note that in these latter works, the discussion centres on evidence for depictives being in the focus domain, which is addressed below.

- d. What John did was ride the bicycle bent out of shape.

[ After Rothstein 2011, p. 1451 ]

The sentences in (67) demonstrate that an object-oriented depictive is part of V, while the subject-oriented one is not. That is, in (67-a)–(67-b), the boldfaced depictive, *drunk*, is shown to optionally appear with the verb, but it can also be independent of V. In contrast, when the underlined depictive, *bent out of shape*, appears independent of V in (67-c), the sentence is infelicitous. In the well-formed sentence in (67-d), the object-oriented depictive appears next to V. Following the current standard in the literature, I assume that object-oriented depictives adjoin at V, and subject-oriented ones at V', as was represented in (66) above.<sup>42</sup>

Similar to what was outlined in §5.2, the two major choices for the syntactic analysis are a small clause analysis with a PRO subject (Chomsky, 1981; Stowell, 1981, 1983; Hoekstra, 1988) and a complex predicate analysis (Williams, 1980; Rothstein, 1983, 2004, 2011); there are also some authors who advocate for a multi-dimensional structure of depictive predicates (Rapoport, 1999; Gumiel-Molina et al., 2016). As is noted in §5.4.5, I assume that the adjectival phrase of a depictive predicate contains a PredP, in line with advocates of both the complex predicate approach and the multidimensional syntax approach. That being said, choosing a particular syntactic approach is not crucial to this thesis, and I therefore leave further discussion aside. The key takeaway of this discussion is that depictive predicates are VP-internal, and a secondary takeaway is that subject- and object-oriented predicates adjoin at different parts of the VP.

In the remainder of this subsection, I present theory on the information structure of depictive predicates. Note that henceforth, the discussion concentrates on subject-oriented depictives only, as these comprise the subtype relevant to the object of investigation, *sit*. Beginning with the generalisation that depictives are VP-internal adjuncts, a consequence is that the depictives, integrated intonationally with the VP, usually have the sentence accent of a sentence (Geuder, 2000). Examples from Geuder's dissertation are in (68).

(68) *Depictive predicates carry the sentence accent*

- a. John didn't leave HAPPY.  
b. ??John didn't LEAVE happy.

[ Geuder 2000, p. 188 ]

In the unmarked sentence in (68-a), the prosodic stress is on *happy*, the depictive predicate. In the sentence in (68-b), the verb is stressed instead of the depictive, and it is judged as odd, if not ill-formed. According to Geuder (2000), (68-b) is possible in the case that the verb receives contrastive focus, i.e., when the content of the verb explicitly contrasts with alternatives.<sup>43</sup> In the case of *leave*, contrastive alternatives might include

<sup>42</sup>See also the discussion in §5.3.2, concerning the adjunction site of postverbal locations in the literal use; in this discussion, I argue that the two types of postverbal components likely attach at the same position.

<sup>43</sup>See §7.2.2 for background on different focus possibilities.

{arrive, stay, . . .}, and a continuation allowing the contrastive interpretation could be *He was already happy when he arrived*.

Other authors have made a similar claim to Geuder's. For example, Himmelmann & Schultze-Berndt (2005b) discuss how, cross-linguistically, depictive predicates appear with focus markers such as 'just', sometimes even obligatorily so. Guemann (1990) and Güldemann (2005) argue that depictives introduce new information and that these predicates are typically the focussed element of the sentence. Using varying terminology depending on their theory, authors such as Laca (1990) explicitly discuss how the depictive contributes new information, and the rest of the sentence's meaning is backgrounded. In addition, empirical work by Winkler (1997/2011) demonstrates that amongst secondary predicates (s. §5.4.1), depictives, not resultatives, receive prosodic stress. Correlation with focus markers, introducing new information, and prosodic stress are all indicative of a lexical item being associated with focus.

Another empirical confirmation of depictive predicates consistently being in a sentence's focus domain concerns a restriction on postverbal subjects in combination with depictive predicates. Inverted structures are indicative of new information, and are associated with focus (Culicover & Winkler, 2008; Ward et al., 2017, a.o.). For Spanish, Guemann (1990), Demonte & Masullo (1999), and Heidinger (2018) argue that when the postverbal subject is focussed, it is ungrammatical for a depictive predicate to appear with unmarked prosody. This suggests that depictives consistently are stressed prosodically, in line with the examples in (68). This pattern can also be seen in English, where the canonical word order is Subject–Verb–Complement (Huddleston & Pullum, 2021), and inverted structures also receive focus. My constructed examples are in (69).

(69) *Incompatibility of depictives with other focussed elements*

- a. From work arrived CHLOE (??tired).
- b. Along the highway drove ERIC (??drunk).

Both sentences of (69) are ill-formed when the depictive is added. However, if the subject were to be de-accented, such as in a context that required the depictive to be focussed, the sentences would be well-formed. An example preceding sentence for (69-a) could be the one in (70).

(70) This morning when she left, Chloe was full of energy.  
From work arrived Chloe TIRED.

In a similar vein, the examples with negation in (64) above demonstrate that the scope of negation must include the depictive. This operator interacts with focus, in that whatever is in its scope is considered to be focussed (Beaver & Clark, 2008).

In a recent dissertation on the information structure of secondary predicates in Spanish, Heidinger (2018) points out that while there is consensus that depictives tend to be in a sentence's focus domain, the examination thus far has been overwhelmingly anecdotal: examples lack further context, and the claims are empirically under-tested, especially in a

systematic/quantitative manner. A relevant research question of Heidinger's dissertation concerns depictive predicates' strength of focus in the presence of other adjuncts, which compete for prosodic prominence. This is relevant to the present investigation of *sit*, because the posture verb's literal use also frequently combines with locative adjuncts. In the following, I discuss this claim of Heidinger (2018).

Depictive predicates are not focus markers themselves, although they are often in the focus domain of a sentence. In turn, Heidinger (2018, §2.2.3.3) states that depictives have a high degree of *Fokusaffinität* "focus affinity", a concept referring to the probability of a particular grammatical role being the (narrow) focus of a sentence. For example, many authors have argued that objects are more likely to be focussed than subjects in canonical word orders (Contreras, 1978; Lambrecht, 1994; Wunderlich, 2006), as objects are more likely to introduce new information than subjects are (Du Bois, 1987, 2003). As we saw above in (69), postverbal subjects in inverted structures are more likely to be focussed, but this is not the canonical order. Heidinger (2018) applies this idea to depictive predicates, arguing that these predicates' function is to introduce new information.

Heidinger (2018, §6.4) proposes that there is an inverse correlation between the "fundamental importance" of a grammatical role and its likelihood of being in focus. For instance, a direct object is a core expression, as it describes a participant of the eventuality, while a depictive is not a core expression, because it only describes the state of a participant. Building on Heidinger (2018), Heidinger & Onea (2021) carried out controlled experimental studies to show that in comparison to locatives and instrumental adjuncts, depictive predicates routinely are the most often focussed. Examples of the different adjunct types are shown in (71).

(71) *Focus affinity of adjunct types, from highest to lowest*

- |    |  |              |
|----|--|--------------|
| a. | John arrived <b>tired</b> .              | DEPICTIVE    |
| b. | John opened the door <b>with a key</b> . | INSTRUMENTAL |
| c. | John was dancing <b>in the park</b> .    | LOCATIVE     |

[ Heidinger & Onea 2021, p. 104 ]

In (71-a), the depictive predicate *tired* is subject-oriented, describing a property of John which holds at the same time as the arrival eventuality. In (71-b), the instrumental *with a key* describes a property of the opening eventuality, as does the external location *in the park* in (71-c). The remainder of this subsection omits discussion of the instrumentals, as these are unlikely to appear with posture verbs in either use.

Heidinger (2018) proposes that grammatical roles like depictive predicates, which are not core components to a verb, are more likely to be focussed than, e.g., direct objects, which are core arguments: by focussing a non-core expression such as a depictive predicate, the speaker can signal that it is indeed important enough to warrant saying it (s.a. Maxim of Quantity, Grice 1975). This is in contrast to, e.g., locations or instruments, which often are subcategorised by a verb or regularly associated with them. In fact, as was introduced in §2.3, posture verbs are often called locative verbs because they consistently

appear with postverbal locatives. Although I show in this thesis that posture verbs have other combinatorial possibilities, it is still conceivable that locations are more likely than depictives to be described as a core expression for posture verbs. According to the focus affinity claim, then, locations are expected to have a lower focus affinity than depictives. When examining the focus affinity of depictives vs. other adjuncts such as locations, Heidinger & Onea (2021) used negation in Spanish sentences with two adjuncts as a diagnostic for association with free focus (Beaver & Clark, 2008). In one experimental study, participants were asked to choose which paraphrase most appropriately described the target sentence. The example in (72) illustrates, in that the sentences in (a) and (b) are intended to be paraphrases of the main negated sentences.

- (72) María no cosechó el cereal **contenta** en el campo.  
 María not harvested the grain happy in the field  
 ‘María did not harvest the grain happy in the field.’
- a. ‘María did not harvest the grain and she was not happy’.      DEPICTIVE  
 b. ‘María did not harvest the grain and she was not in the field’.      LOCATIVE

In (72), where there is both a depictive and a locative adjunct, it was more often the case in their study that a sentence with the depictive, like in (72-a), was chosen. I do not know of any studies testing parallel sentences in English, although it would be expected, based on the literature outlined above, that adjuncts in combination with a verb like literal *sit* pattern similarly, i.e., that the depictive predicate is more likely to be focussed than a postverbal location. In any such study on the information structure of adjuncts, it is important to be precise about the details of the locative adjunct, as they can vary in syntactic height and focus patterns. We return to the information structure of depictives in the diachronic analysis in Chapter 7, where I provide empirical support to the claim that depictives are in the focus domain, with a methodology developed specifically for these types of naturally-occurring sentences (Riester et al., 2018; Brunetti et al., 2021). This subsection has reviewed the formal literature on the syntax and information structure of depictive predicates, and compared the information structure of depictives to locations. The main claims of this subsection are that depictive predicates are VP-internal adjuncts, similar to locative adjuncts with literal *sit* (s. §5.3.2), but that depictives are claimed to have a higher focus affinity than locations. The next subsections move away from the syntax-pragmatics interface to semantics, as we will look at the types of adjectives compatible with both uses. In §5.4.3, theory on stage-level and individual-predicates is discussed as a potential way to account for the semantic compatibility of the adjectives combining with both the literal and non-literal uses of *sit*.

### 5.4.3 Compatible adjectives with both uses describe stages

In the previous subsection, I argued that the postverbal adjectives sometimes appearing with literal *sit* are depictive predicates. One criterion for depictive predicates is that they encode a non-inherent property of the subject referent. This means that adjectives like

*boring* or *intelligent* are less likely to be compatible than *rotten* or *sober*. In addition, the examples (48)–(49) in the introduction to this section demonstrated that both the literal and non-literal uses of *sit* combine with adjectives encoding similar property types. That is, the postverbal adjectives appearing with non-literal *sit* resemble *rotten* or *sober* more than *boring* or *intelligent*.

The present subsection first describes background on a traditional bifurcation of predicate types: stage-level and individual-level predicates.<sup>44</sup> Then, I demonstrate, based on the temporary/non-inherentness of the properties encoded by the compatible adjectives, that adjectives combining with literal and non-literal *sit* resemble stage-level predicates, not individual-level ones.

The first observation of this distinction is often credited to Milsark (1974), with a discussion of presentational *there*-sentences. In a section about restrictions on predicates in his dissertation, Milsark distinguishes between two types of predicates: what he calls “properties”, which are described to be facts about entities and which are assumed to be permanent, and what he calls “states”, which are described as a condition of an entity that is assumed to be temporary. Examples of these can be found in (73-a) for the former type, and (73-b) for the latter.

- (73) a. *intelligent, beautiful, boring, crazy*, all NP predicates, colours, shapes, . . .  
 b. *sick, hungry, tired, alert, clothed, naked, drunk, stoned, closed, open*, . . .

[ Milsark 1974, p. 210 ]

As noted on p. 71 of his own dissertation, Carlson (1977) builds on Milsark’s observations, although with a different nomenclature. The predicates in (73-a) are called INDIVIDUAL-LEVEL, and those in (73-b) are called STAGE-LEVEL; henceforth I utilise Carlson’s terminology as it is the most common one in the literature.

The term “individual” refers to a series of stages, such that they are stages of the same thing. An individual-level predicate is then one that describes an inherent property of an entity, and this property is assumed to be the same at all stages of the individual; if the entity loses this property, they are no longer the same entity as we know it. The predicates in (73-a) meet this description: if somebody named Sam loses the property of being intelligent, it is difficult to see them the same. The persistence of the property description in individual-level predicates is sometimes also referred to as a “lifetime effect”.

The term “stage” is said to come from Quine (1960), and it concerns “roughly, a spatially and temporally bounded manifestation of something” (Carlson, 1977, p. 68); if an entity loses this property, they can still be described as that entity. The predicates in (73-b) fit this description: if Sam loses the property of being hungry, they remain as Sam.

There are grammatical and interpretational consequences to the stage-and individual-level distinction. Milsark’s observations originated in presentational *there*-sentences, and

<sup>44</sup>I do not view the distinction as having strict boundaries, but rather as being two empirical tendencies, and I point out the existence of counterexamples at the end of the subsection.

minimal pairs can be found in the well-known examples in (74)–(75); unless otherwise noted, the predicates are boldfaced in these and the rest of the examples.

- (74) a. Firefighters are **altruistic**. INDIVIDUAL-LEVEL  
 b. \*There are firefighters **altruistic**.
- (75) a. Firefighters are **available**. STAGE-LEVEL  
 b. There are firefighters **available**.

[ After Kratzer 1988, p. 125 ]

Both types of predicates are possible in the base sentences (74-a)/(75-a). However, once the syntax changes, and *there* is inserted in (74-b)/(75-b), only the stage-level predicate *available* in (75-b) is acceptable. In addition to the grammaticality difference in the two predicate types, their possible interpretations with bare plurals in the base sentences are different (74-a)/(75-a). For the stage-level predicate in (75-a), both an existential interpretation, ‘there are fire fighters available’, and a universal one, ‘it is a characteristic property of firefighters that they are available’, are possible.<sup>45</sup> For the individual-level predicate in (74-a), on the other hand, only the universal reading is possible: ‘it is a characteristic property of firefighters that they are altruistic’.

Other lexical categories can qualify as either stage- or individual level.<sup>46</sup> Using *there*-insertion as a diagnostic, Carlson (1977) identifies locatives as eligible stage-level predicates and nominal components as ineligible stage-level predicates; his examples are displayed in (76)–(77).

- (76) *Locative components resemble stage-level predicates*  
 a. Four ducks were **on the corner**.  
 b. There were four ducks **on the corner**.
- (77) *Nominal components resemble individual-level predicates*  
 a. Some man was **a spy**.  
 b. \*There was some man **a spy**.

[ After Carlson 1977, p. 73 ]

While many NPs arguably denote properties, according to Milsark (1974) these properties are difficult to characterise as being temporary. This can be seen in (78).

- (78) *Non-temporal nature of NPs*  
 a. John is a drunk. He is never sober.  
 b. \*John was **a drunk** at Bill’s last party.

<sup>45</sup>Although see also the discussion in Diesing (1988), on an additional stage-level reading identified by Kamp (1981); Heim (1982). This reading for (75-a) would be ‘there are typically firefighters available around here’.

<sup>46</sup>Milsark and Carlson additionally discuss participial components and quantifiers as eligible categories. I leave aside these categories in this brief introduction to the stage-level/individual-level distinction.

(79) *Non-temporal nature of NPs*

- a. Mary is a nude. She never wears clothes.
- b. \*Mary is often a nude among friends.

[ Adapted from Milsark 1974, p. 211<sup>47</sup> ]

It is possible to use an NP in the predicative position, as seen in (78-a)/(79-a). As indicated by the follow-up sentences, these nominals predicate an individual-level property of the subject: the referent of *John* is always drunk, not just at Bill's party, and the referent of *Mary* is always naked, not just when she is with her friends. When these NPs are inserted into stage-level contexts, similar to (78-b)/(79-b), the sentence is not well-formed. This is corroborated by the unacceptability in presentational *there*-sentences in (80).

(80) *NPs and the there diagnostic*

- a. \*There was John a drunk.
- b. \*There was Mary a nude.

It was noted in §5.4.1 that only stage-level predicates can function as secondary predicates. Subject-oriented ones are in (81), and object-oriented ones are in (82); in the original text, the examples are in Spanish, but I chose to display only the English, in order to emphasise that this effect is also present in English.

(81) *Subject-oriented secondary predicates are compatible with stage-level predicates*

- a. Sam came out of the shower (\***Buddhist**). INDIVIDUAL-LEVEL
- b. Sam came out of the shower **naked**. STAGE-LEVEL

(82) *Object-oriented secondary predicates are compatible with stage-level predicates*

- a. I drank the coffee (\***Arabic**). INDIVIDUAL-LEVEL
- b. I drank the coffee **warm**. STAGE-LEVEL

[ Adapted from Fábregas &amp; Marín 2015, p. 192 ]

In the subject-oriented secondary predicates in (81), the individual-level predicate *Buddhist* is unacceptable in (81-a). As indicated by the parentheses, the sentence would be grammatical without *Buddhist*—or with a stage-level predicate, like *naked* in (81-b). In the object-oriented secondary predicates in (82), the target participant is now the referent of *the coffee*. That change notwithstanding, it is again only the stage-level adjective in (82-b) that is acceptable. As is discussed in §5.4.1, the reason for this is that depictives encode situations that are true only for the duration of the main predicate. This characteristic of the secondary predicate results in an inference that there is a temporal boundary to the property being described by the secondary predicates, thereby matching the profile of stage-level, not individual-level, predicates.

<sup>47</sup>In the original text, there is no (in-)felicity marking on (78-b)/(79-b). However, the discussion immediately below the sentences in that original text indicates that they are infelicitous, and this aligns with my own native speaker intuitions.



We see the same pattern of the secondary predicates in copular verbs like *remain* or *seem* (s. Marín 2010 for an overview of Spanish facts, also §5.1.1 on copular verbs). In these cases, the adjective is the primary, not the secondary predicate. Examples are in (83), using the same subject-oriented adjectives as (81).

- (83) *Copular verbs are compatible with stage-level predicates*
- |    |   |                  |
|----|---|------------------|
| a. | *After showering, Sam {remained seemed} <b>Buddhist</b> . | INDIVIDUAL-LEVEL |
| b. | After showering, Sam {remained seemed} <b>naked</b> .     | STAGE-LEVEL      |

For a copular verb like *remain* or *seem*, there is a temporal inference similar to what we saw with the secondary predicates in (81)–(82). Namely, only the stage-level predicate *naked* in (83) is acceptable with the copular verb.

The present subsection has given a brief overview of stage-level and individual-level predicates. We can use the *there*-insertion with *sit* to diagnose the type of predicate of the adjective. It is expected from the patterns in (81)–(83), considering that literal *sit* combined with depictives and non-literal *sit* is a copular verb, that the compatible adjectives are classified as stage-level predicates. This is confirmed in (84).

- (84) *Adjectives with sit are stage-level predicates*
- |    |   |                  |
|----|---|------------------|
| a. | *There were {kids books} { <b>boring intelligent</b> }. | INDIVIDUAL-LEVEL |
| b. | There were {kids books} { <b>dirty abandoned</b> }.     | STAGE-LEVEL      |

As we can see in (84), the adjectives *dirty* and *abandoned* are felicitous in the stage-level context of *there*-insertion, but the adjectives *boring* and *intelligent* are ill-formed in the same context. This suggests that the compatible adjectives pattern like stage-level predicates for both uses, a pattern which is also seen with secondary predicates and copular verbs, constructions which are both relevant to *sit*.

Before closing out this subsection, it is important to point out some examples that are problematic for the distinction; these examples are particularly problematic for lexical accounts of the distinction.

The explanations of the examples in this subsection often have mentioned temporal boundaries, as many authors tend to describe stage-level predicates as encoding temporary properties and individual-level ones as encoding permanent ones. However, this demarcation is too strict. As Carlson himself states, “we cannot separate the two lists [...] by simply putting a stopwatch on a length of time the predicate may hold and seeing if that stopwatch reaches a certain critical time” (1977, p. 72). In other words, temporary and permanent is merely a tendency of items described as stage-level and individual-level predicates, respectively, not strictly how they always behave. A classic example from Carlson is in (85).

- (85) *Long-term properties*
- |    |  |
|----|--|
| a. | Five men were { <b>alive dead</b> }.       |
| b. | There were five men { <b>alive dead</b> }. |

[ Adapted from Carlson 1977, p. 72 ]

Both of the predicates in (85) can last for a long interval. If one removes the property of being alive from an entity, then that entity is definitely no longer the same. The same is true for being dead. Even though, conceptually, the predicates pattern like individual-level predicates, in the *there*-insertion test they pattern like stage-level predicates.

In (86), we see the reverse pattern. Two predicates that would be expected to be interpreted on a long-term interval are in fact interpretable as short-term properties in the *there* diagnostic.

(86) *Short-term properties*

- a. Mary is a **contestant** on *Do You Want to Be a Millionaire?*
- a'. \*There was Mary a **contestant**.
- b. Mary {stopped being|used to be} **altruistic**.
- b'. \*There was Mary **altruistic**.

[ Adapted from Arche 2006, pp. 7, 200 ]

In (86-a), the predicate is an NP, *a contestant*, and although we saw above that NPs are typically individual-level predicates, this predication has only a temporary interval where it is true. In other words, the referent of *Mary* was a contestant only briefly, not for all or most of her life. Although the predication is temporary, it behaves like an individual-level predicate when transformed into existential *there*, seen in (86-a). Similarly, in (86-b) the typically individual-level adjective *altruistic* is used in an explicitly short-term context. Both *stopped being* and *used to be* describe an end to the interval of Mary being altruistic. The temporary interpretation notwithstanding, we can see in (86-b) that in *there*-insertion, *altruistic* still behaves like an individual-level predicate. The examples in (85)–(86) suggest that the general tendencies of stage- and individual-level predicates are not lexically encoded.

In the next subsection §5.4.4, I present a perspective on the distinction which argues for context-sensitivity of adjectives on the one hand, and the role of structure in distinguishing between stage-/individual-level predicates on the other hand.

#### 5.4.4 Compatible adjectives and comparison classes

In the present subsection, I introduce theory from Gumiél-Molina et al. (2015, 2016). These authors argue that adjectival distinctions can be narrowed down to how the adjective is evaluated. These two papers are concerned with Spanish copulas and depictive predicates,<sup>48</sup> respectively, but the observations are applicable to English *sit*.

For one, the non-literal use of *sit* comprises a copular verb and the literal use a lexical verb. This means that when the non-literal use appears with only an adjective postverbally, that adjective is the main predicate, as argued in §5.1; when the literal use appears

<sup>48</sup>The earlier paper, on the copula, is more fleshed out, so when describing some details I cite only Gumiél-Molina et al. (2015).

with an adjective postverbally, that adjective is a secondary predicate, as argued in §5.4.1. As shown in (1) and (48) in the introduction to this chapter and section, respectively, a main argument underlying this split analysis is that the postverbal material is optional with literal *sit* and obligatory with non-literal *sit*.

Secondly, as it has been shown with (48)–(49) and further established in the previous subsection that, despite the structural differences, the adjectives combining with each use pattern alike. In particular these adjectives tend to denote properties which are not inherent, or, as described in §5.4.3, which are stage-level predicates. However, as described at the end of the previous subsection, the stage-level/individual-level theory cannot account for counterexamples, where, e.g., a stage-level interpretation is given to an individual-level predicate. The account described in the current subsection is not lexically-rooted. Instead, Gumiel-Molina et al. (2015, 2016) propose that differences are due to the functional structure of a comparison class and that this functional difference is introduced in the syntax of the adjectival phrase. These details are shown in the next subsection, where the formal implementation is presented. In this subsection I introduce theory on adjective types and comparison classes, upon which I build in the subsequent subsection to account for *sit*'s adjectives.

Within the literature on adjectives, one overarching distinction is between gradable and non-gradable predicates.<sup>49</sup> GRADABLE ADJECTIVES, e.g., *tall* and *clean*, can appear in degree constructions or degree modification (Kennedy & McNally, 2005; Kennedy, 2007; McNally, 2011; van Rooij, 2011; Toledo & Sassoon, 2011; Morzycki, 2015; Burnett, 2017, i.a.). In contrast, NON-GRADABLE ADJECTIVES cannot be targeted by this sort of modification. Degree modification of different gradable types is diagnosed in (87), with the comparative type of degree construction.

(87) *Degree modification is possible with gradable predicates only*

- |    |   |              |
|----|---|--------------|
| a. | She is <b>taller</b> than her sister.               | GRADABLE     |
| b. | The red plate is <b>cleaner</b> than the white one. | GRADABLE     |
| c. | #She is more <b>pregnant</b> than her sister.       | NON-GRADABLE |
| d. | #Ally is more <b>barefoot</b> than Chloe.           | NON-GRADABLE |

Non-gradable adjectives can be forced into a gradable interpretation, although these cases are more limited. For instance, for the two non-gradable adjectives we saw in (87), it is easier to find a context licensing a gradable interpretation of *pregnant* than it is for *barefoot*, as is shown in (88).<sup>50</sup>

<sup>49</sup>Note that I use the terms “predicate” and “adjective” interchangeably.

<sup>50</sup>There are also non-gradable predicates, such as adjectives describing nationality, which pattern like individual-level predicates. Gumiel-Molina et al. (2015) follow Roy (2013) in assuming that, syntactically, these predicates are nouns. I omit them from the discussion, both because *sit* cannot combine with postverbal nouns and because the relevant type of predicate for *sit* patterns like a stage-level, not an individual-level, predicate.

- (88) *Forcing gradable interpretations of non-gradable predicates*
- a. {She is showing more than her sister.  
She is more **pregnant** than her sister. [Burnett 2012, p. 12]}
  - b. {Only Ally has a toe ring; both have no socks/shoes on.  
#Chloe is more **barefoot** than Ally.}

The context of (88-a) describes the stomach of the subject as being bigger than her sister's. In this way, the degree of pregnancy is perceived as being larger for the subject than for the sister. Even though the context of (88-b) describes Ally's foot as being more adorned than Chloe's, it is still odd to use it in a comparative construction. In this way, some non-gradable predicates can be forced into a gradable interpretation, but this is not uniformly applicable. After discussing gradable predicates in more detail, the discussion returns to non-gradable predicates and how they fit into the account of Gumiel-Molina et al. (2015, 2016).

Within the gradable category, there is a further distinction between RELATIVE and ABSOLUTE gradable predicates: the former are interpreted relative to a context-dependent standard, such as *tall* or *big*; the latter are interpreted independently of context, and the standard is located at the minimum or maximum, on a closed scale. The context-dependency of relative adjectives can be seen in *for*-phrases, in that these phrases make reference to extensional comparison classes. That is, the *for*-phrase constrains the adjective to be evaluated only with respect to the standard established across other individuals in that comparison class. In (89), the degree of height of the subject is evaluated for the standard, which is calculated by averaging the height of the individuals in the comparison class; the extensional comparison class for (89) comprises eight-year-olds only.

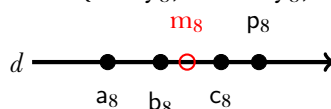
- (89) Philip is **tall** for an eight year old. RELATIVE

The sentence in (89) is true iff the degree of Philip's height is the same or higher than the standard degree of height for other individuals of the same age. These individuals with the same age constitute the comparison class. Each counterpart individual contributes their height which is true at the time they are that age. That is, the counterpart contribution is not true when those individuals were seven or ten years old, only when they are eight. Thus, *tall* is evaluated at a midpoint of individuals of a certain age, as in (89).<sup>51</sup> The account in Gumiel-Molina et al. (2015, 2016) builds on Sassoon & Toledo (2011), Toledo & Sassoon (2011), and they argue that such an evaluation with respect to a BETWEEN-INDIVIDUALS comparison class. This class corresponds to properties in the traditional individual-level category. Figure 5.2 illustrates the BETWEEN-INDIVIDUALS comparison class for the relative adjective *tall* in (89).

The degrees of height are marked along a continuous scale; the members of the comparison class are marked with black circles and listed as individual constants below that

<sup>51</sup>The counterparts are not limited to age groups. For example, if the referent of *Philip* in (89) is a ping-pong player, his height could be evaluated with respect to ping-pong players.

FIGURE 5.2: Illustration of BETWEEN INDIVIDUALS comparison class in (89)

Comparison class: {Andy<sub>8</sub>, Brittany<sub>8</sub>, Charles<sub>8</sub> . . . }

line; the midpoint value, marked with an open red circle, and the subject, marked with a black circle, are above the line; all the individuals have a subscripted ‘8’, which represents the counterpart that they contribute. In the case of (89), the counterpart is when the individuals are eight years old.

In contrast, absolute adjectives with a minimum standard include *dirty*, while those with a maximum standard include *clean* or *full*. Both types are traditionally considered to be context-independent, and therefore incompatible with a *for*-phrase and comparison class. In other words, it is considered odd to constrain the comparison class of an adjective if the standard is computed independently of that class. This is shown in (90).

(90) The plate is {clean|dirty} (#for a used plate). ABSOLUTE

Authors like Rotstein & Winter (2004); McNally (2011); Sassoon & Toledo (2011); Toledo & Sassoon (2011), however, have argued for the context-sensitivity of absolute adjectives. Evidence for this comes from sentences like in (91).

(91) *Context-sensitivity of absolute adjectives*

- a. The child’s shirt is {dirty|clean}.
- b. The tuxedo is {dirty|clean}.

[ Toledo & Sassoon 2011, pp. 138–139 ]

In the sentences in (91), the two subjects have different standards of comparison: children’s t-shirts are often dirtier than tuxedos. In this way, the evaluation of the subject depends on how that entity is at other times, not with respect to a comparison class with other clothes. Sassoon & Toledo (2011), Toledo & Sassoon (2011) argue that data such as this is evidence that all gradable adjectives are context sensitive, and more specifically, sensitive to the characteristics of the predicated individual in their own right.

This means that it is possible to evaluate these adjectives with respect to a comparison class. Following Sassoon & Toledo (2011) and Toledo & Sassoon (2011), Gumiel-Molina et al. (2015, 2016) argue that the comparison class of an absolute adjective comprises multiple stages of the same individual, where the individual holds the property to different degrees. This intensional class is therefore said to be evaluated WITHIN AN INDIVIDUAL, and corresponds to properties of the traditional stage-level predicate category. The standard in this case is one of these degrees of the property. An example targeting degrees of cleanliness is in (92), where the target adjective is again boldfaced and the comparison class is underlined. In this case, the comparison class is listed in parentheses

because it is slightly unnatural to pronounce this; Gumiel-Molina et al. (2015) assume it is a null pronoun, following (Kennedy, 2007).

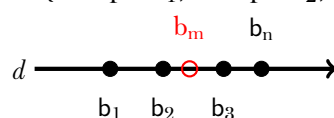
(92) [Philip's]<sub>i</sub> backpack is {full|dirty} (for his<sub>i</sub> backpack). WITHIN AN INDIVIDUAL

The sentence in (92) is true iff the degree of fullness or dirtiness of Philip's backpack is the same as or greater than its standard degree of fullness or dirtiness. That is, this comparison class has nothing to do with the degree of fullness/dirtiness of other backpacks. Instead, the counterparts are realisations of the individual, here a backpack, at different world indices.

Figure 5.3 illustrates the WITHIN-AN-INDIVIDUAL comparison class for the adjectives in (92).

FIGURE 5.3: Illustration of WITHIN AN INDIVIDUAL comparison class in (92)

Comparison class: {backpack<sub>1</sub>, backpack<sub>2</sub>, backpack<sub>3</sub>, ... }



Like in Figure 5.2, the degrees of fullness or dirtiness in Figure 5.3 are marked along a continuous scale. The members of the comparison class are marked with black circles and listed as individual constants below that line. The midpoint value, marked with an open red circle, and the subject, marked with a black circle, are above the line. In contrast to the previous comparison class in Figure 5.2, however, the individuals represented by the same constant have differing subscripts, in order to show that they are the same individual at different spatiotemporal slices.

Now we return to the non-gradable adjectives like *pregnant*, *barefoot*, shown in (88) to have a gradable interpretation, and discuss how they fit into the account. Gumiel-Molina et al. (2015) argue that because these adjectives have a gradable interpretation, they do include a comparison class, WITHIN AN INDIVIDUAL. In the following, I show why these adjectives are evaluated with respect to indices of one individual, not across many individuals.

Up until this point, it has been possible to use English examples of the relevant adjectives. For the non-gradable adjectives with potential gradable interpretations, however, it is helpful to look at their behaviour in other languages. As noted above, Gumiel-Molina et al. (2015) are interested in the distribution of the two Spanish copulas. Although the literature on this distribution is huge, and there are various proposals to account for the differences (Luján, 1981; Clements, 1988; Fernández Leborans, 1999; Marín, 2004; Arche, 2006; Brucart, 2012; Arche et al., 2017, a.m.o.), a number of authors have argued that the distribution is related to the stage-level and individual-level distribution, where *estar* combines with the latter and *ser* the former (Bolinger, 1947; Roldán, 1974; Falk, 1979; Franco & Steinmetz, 1983, 1986). The comparison approach employed by Gumiel-Molina et al. (2015) builds on these observations about the traditional distinction, and argues that this is due to the interpretation of the functional structure. That is, in a split-copula system like Spanish, the comparison class found in the functional

structure selects for a copula, either *ser* or *estar*. In the case that *ser* is selected, the appropriate comparison class is BETWEEN-INDIVIDUALS, like we saw in (89). For *estar*, it is WITHIN-AN-INDIVIDUAL, such as was seen for (92).<sup>52</sup> With this in mind, we can see which Spanish copula combines with the relevant non-gradable predicates in (93).

(93) *Non-gradable predicates are compatible with Spanish estar*

- a. Chloe {\*es| está} **descalza**.  
Chloe is.SER is.ESTAR barefoot  
'Chloe is **barefoot**.'
- b. Chloe {\*es| está} **harto**.  
Chloe is.SER is.ESTAR fed-up  
'Chloe is **fed up**.'

[ SPANISH ]

As can be seen in (93), the adjectives *descalza* 'barefoot' and *harta* 'fed up' are only possible with *estar* in Spanish. This already suggests that functional structure contains a WITHIN-AN-INDIVIDUAL comparison class, not a BETWEEN-INDIVIDUALS comparison class.

We can confirm this suggestion with a diagnostic from Gumiel-Molina et al. (2015), which uses a temporal quantifier and a continuation to target the different stages of one individual, shown in (94) with the temporal existential quantifier *a veces* 'sometimes'. In addition, a continuation with a second sentence intends to target that quantification over events, by referring to those quantified instances. The reference phrase is underlined in (94).

- (94) La puerta está **a veces** cerrada. En esos momentos nadie puede  
the door is.ESTAR sometimes closed in these moments nobody can  
entrar.  
enter  
'The door is **sometimes** closed. At those moments nobody can enter.'

[ SPANISH; after Gumiel-Molina et al. 2015, p. 34 ]

The first sentence of (94), with *a veces* 'sometimes' is felicitous: it is possible to target separate spatio-temporal slices of the subject referent. In the case of (94), it is a door and there are some slices where it had the property 'closed', possibly some slices where it had the property 'open', and possibly some slices where the property was somewhere in between 'closed' and 'open'. The second sentence in (94), beginning with *en esos momentos* 'at these moments', is felicitous because the degree of being closed is evaluated with respect to these various slices of the individuals' existence. That is, it is evaluated with respect to a WITHIN-AN-INDIVIDUAL comparison class.

Applying this diagnostic to the *between-individuals* comparison class proves difficult, as it contains temporal quantification. This is illustrated in (95), with *tall*.

<sup>52</sup>English does not have a split copula system. The discussion in this subsection is not meant as a proposal, implicit or otherwise, that *be* and non-literal *sit* have a distribution akin to Spanish *ser* and *estar*. Rather, due to the broad definition of copular verbs in §5.1.1, I view non-literal *sit* as one of many copular verbs.

- (95) Juan está (#a veces) alto.  
 Juan is.ES<sub>TAR</sub> sometimes tall  
 ‘Juan is (#sometimes) tall.’

[ SPANISH; after Gumiel-Molina et al. 2015, p. 34 ]

As can be seen in (95), in either Spanish or English, temporally quantifying an adjective like *tall* is infelicitous. Gumiel-Molina et al. (2015) argue for an absolute reading of *tall*, which would render (95) felicitous, but the Spanish speakers I consulted were unable to get this interpretation. Therefore, I do not continue the diagnostic with the second sentence referring to the quantified instances, as was done in (94).

We can use the temporal-quantification distinction from (94)–(95) as a diagnostic for the non-gradable adjectives *embarazada* ‘pregnant’ and *descalza* ‘barefoot’ from (93). The expectation is that the non-gradable adjectives *descalza* ‘barefoot’ and *harta* ‘fed up’ pattern like the adjective with a WITHIN-AN-INDIVIDUAL comparison class in (95).

(96) *Non-gradable adjectives and temporal quantification*

- a. Chloe está a veces descalza. En esos momentos se puede ver  
 Chloe is.ES<sub>TAR</sub> sometimes barefoot in these moments REFL can.3<sub>SG</sub> see  
 su tatuaje de sirena.  
 her tattoo of mermaid  
 ‘Chloe is **sometimes** barefoot. At those times, you can see her mermaid  
 tattoo.’
- b. Chloe está a veces harta de sus hermanos. En esos  
 Chloe is.ES<sub>TAR</sub> sometimes barefoot in these moments yells.3<sub>SG</sub> a-lot  
 momentos grita mucho.

‘Chloe is **sometimes** fed up with her brothers. At those times, she yells a lot.’

The continuations in both examples of (96) are felicitous, showing that the adjectives are evaluated with respect to the stages of the subject, the referent of *Chloe*. This suggests that although these predicates do not fit the traditional definition of gradable predicates, they can be interpreted as gradable predicates and this indicates there is a comparison class in the functional structure. The relevant comparison class for (96) is intensional, in that it does not contain individuals, but world/time indices.

So far in this subsection, I have presented the ideas behind the account of Gumiel-Molina et al. (2015, 2016). I have shown their claims that the observations about stage-level and individual-level predicates be captured by comparison classes. This account is advantageous, as it can capture intuitions about what exactly is being evaluated, and because it does not rely solely on the lexical properties of adjectives. In the next subsection, we apply this theory to the adjectives which are compatible with both uses of *sit*.

#### 5.4.5 Postverbal adjectives, formally

The previous subsection presented the theory behind an account of stage-level and individual-level predicates, from Gumiel-Molina et al. (2015, 2016). This proposal is



able to account for the different patterns of adjectives with functional structure. In the present subsection, I apply the theory to the adjectives which combine with literal and non-literal *sit*, and then I show how comparison classes work more formally.

The postverbal adjectives seen so far to be compatible with both the literal and non-literal uses of *sit* were shown in §5.4.3 to pattern like stage-level predicates. In the introduction to comparison classes in §5.4.4, I noted that the WITHIN-AN-INDIVIDUAL class is similar to the traditional stage-level predicate category. In this way, I expect that the compatible adjectives pattern with the WITHIN-AN-INDIVIDUAL comparison class. To confirm this, I first show whether the adjectives used in the preceding examples are compatible with literal and non-literal *sit*. Then, I employ the temporal quantification test to demonstrate that the degree of the adjective really is being evaluated with respect to the stages of the subject. The examples in (97) begin this analysis, with sentences for each of the subject types proposed in §4.1; it is assumed that the context includes salient individuals who are the subject referents.<sup>53</sup>

- (97) *Relative adjectives are incompatible with sit*
- |   |             |
|---|-------------|
| a. #The dog sat <b>intelligent boring</b> .         | LITERAL     |
| b. #The coffee cup sat <b>intelligent boring</b> .  | NON-LITERAL |
| c. #The whale sat <b>intelligent boring</b> .       | NON-LITERAL |
| d. #The balloon dog sat <b>intelligent boring</b> . | NON-LITERAL |
| e. #The castle sat <b>intelligent boring</b> .      | NON-LITERAL |
| f. #The heartbreak sat <b>intelligent boring</b> .  | NON-LITERAL |

As can be seen in (97), two typical relative adjectives, representing the *between-individuals* comparison class, are incompatible with both literal and non-literal *sit*. In (98), in contrast, the boldfaced adjectives are felicitous; these absolute adjectives are meant to represent the WITHIN-AN-INDIVIDUAL comparison class. The same context assumptions apply here.<sup>54</sup>

- (98) *Absolute adjectives are compatible with sit*
- The dog sat **dirty** (from its walk in the woods).
  - The coffee cups sat **dirty** (with stains).
  - The whale sat **dirty** (from the oil spill).
  - The balloon dog sat **dirty** (with paint).

<sup>53</sup>I avoid using *tall* here, not because it shows compatibility with the *between-individuals* class, but because when felicitous, it gives a posture-modifying reading. For example, with a dog subject referent, as in (i), the interpretation is that the dog is sitting in a way that extends its verticality. This is contrary to the use of *tall* as in (89), where the subject referent's actual height is evaluated.

(i) The dog sat tall.

<sup>54</sup>I include extra context with information about why the subject referent is clean or dirty, because the adjectives combining with either *sit* use are typically related to not moving or to disuse/idleness (s. corpus studies in Chapter 3 and examples in §4.1). In this way, the adjectives typically discussed in the gradability literature are not the most common candidates for combination with either *sit*; this is emphasised with *heavy*, for the heartbreak type of subject in (98-f). More common candidates are discussed below.

- e. The castle sat **dirty** (with graffiti).
- f. The heartbreak sat **heavy**.

In (98), all of the concrete subjects are felicitous with either *dirty* or *clean*, two absolute adjectives which were seen before. The abstract subject of (98-f) is not compatible with being ascribed degrees of cleanliness or dirtiness, most likely due to the abstract nature. That being said, it is possible to use the predicate *heavy* with an abstract subject, as can be seen in (98-f). The data in (97)–(98) suggests already that both literal and non-literal *sit* combine with predicates of the WITHIN-AN-INDIVIDUAL comparison class only.

The discussion of depictive predicates with literal *sit* in §5.4.1 showed us that common adjectives used as depictives are ones describing a physical state or condition, such as *barefoot* or *cross-legged*. Remember from the discussion above that these are non-gradable predicates that pattern with the WITHIN-AN-INDIVIDUAL comparison class. Predicates like *barefoot* are compatible not just with the literal uses when they are depictive predicates, but also some balloon-dog-type subjects of non-literal use when they are the main predicate.<sup>55</sup> This is shown in (99).

(99) *Common depictive predicates with literal and non-literal sit*

- a. Chloe was sitting **barefoot** last I saw her. LITERAL
- b. The dead body was sitting **barefoot** when they found it. NON-LITERAL

In addition to predicates describing the physical state of somebody, the adjectives seen in the corpus study data in Chapter 3 are also often non-gradable. One example, repeated often throughout this thesis is *idle*. Others include items such as *stuck*, *hidden*, or *abandoned*. Diagnostics with temporal quantification and *sometimes* can be found in (100), to see whether the property is evaluated with respect to stages of the subject, or with respect to different subjects. That is, the goal of the diagnostics in (100) is to identify whether these non-gradable predicates pattern like other WITHIN-AN-INDIVIDUAL comparison class predicates. The adjective is boldfaced in each sentence in (100).<sup>56</sup>

(100) *Temporal quantification and sit*

- a. The dog sometimes sat **idle**. At those times, he observed what was happening outside.
- b. Phil's backpack sometimes sat **stuck**. At those times, he found it again quickly.
- c. My pet whale sometimes sat **stuck**. At those times, Phil rescued it quickly.
- d. Phil's balloon dog sometimes sat **hidden**. At those times, Phil found it again quickly.

<sup>55</sup> Depending on one's definition of "physical state or condition", a predicate such as *injured* could combine with a whale-type subject. In other words, this classification is not limited to those subject referents with the required sitting anatomy, as defined in §2.2.2–2.2.3, which is a butt.

<sup>56</sup> As was noted in FN20 in Chapter 3, I assume that the adjectival participles shown here ascribe a stative property to the subject referent, and therefore subsume them under the "adjective" cover term.

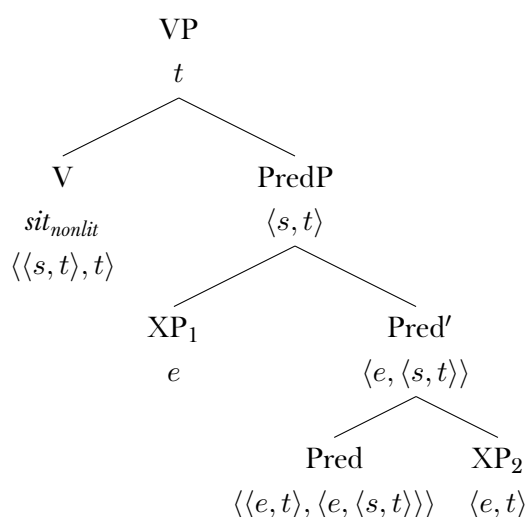
- e. Cochem castle sometimes sits **abandoned**. At those times kids partied there.
- f. My depression sometimes sits **heavy**. At those times, swimming helps.

All of the subject types are compatible with *sometimes* and a continuation targeting its event quantification. This means that even if the predicate is non-gradable, it is evaluated with respect to a WITHIN-AN-INDIVIDUAL comparison class, found in its functional structure.

The remainder of this subsection outlines how comparison classes can be formally implemented, building on the account in Gumiel-Molina et al. (2015, 2016) for copular verbs and depictive predicates. A foundational element of their account is that the adjective is generated within a PredP both when a postverbal component of the copular verb and when the depictive predicate, an adjunct of a lexical verb. Their account was originally developed for copular verbs in the 2015 paper and then extended to depictive predicates in the 2016 paper; the structure of the discussion parallels this chronology.

In §5.2, I presented my structural assumptions for each use of *sit*; non-literal *sit* is at V and takes PredP as its complement. This is illustrated in (101).

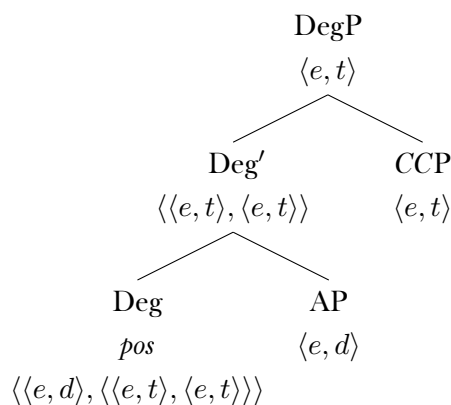
(101) The semantic types of non-literal *sit*'s structure



In the structure in (101), XP<sub>2</sub> represents the adjectival node. The lexical category of an adjective, head of an AP, is commonly assumed to have a functional extension called the DegreePhrase, henceforth DegP. The head of DegP is the POSITIVE morpheme, henceforth *pos*, which expresses the meaning of the adjective with respect to its positive degree (Corver, 1991). Departing from Toledo & Sassoon (2011), who like Kennedy (2007) assume that the comparison class is encoded in *pos*, Gumiel-Molina et al. (2015) follow Kennedy (1999); Fulst (2006) and claim that the comparison class is interpreted as a property instantiated at its own node. This property is then an argument of *pos*, and therefore variable for each adjective. In the structure in (102), the comparison class is introduced in the CCP, and *pos* is the head of Deg; the semantic types of each node are based on the discussion in Gumiel-Molina et al. (2015). Crucially, the semantic type of

DegP is  $\langle e, t \rangle$ ; this is crucial because it is the complement of Pred, i.e.,  $XP_2$  in (101), and must be a property-denoting expression.

(102) *A semantic tree of DegP*



[ From Gumiel-Molina et al. 2015, p. 37 ]

The denotation of *pos* is in (103). The function  $M$  sets the standard degree of the adjective with respect to the comparison class.

(103)  $\llbracket \textit{pos} \rrbracket = \lambda g_{\langle e, d \rangle} \lambda P_{\langle e, t \rangle} \lambda x_e. g(x) \geq M(g)(P)$

[ Gumiel-Molina et al. 2015, p. 28 ]

For example, an adjective such as *tall* or *clean* is generated in the AP and outputs the degrees of that property for an individual. This is one argument of *pos*, represented in (103) as  $g$ . This degree of height or of cleanliness is then evaluated with respect to the standard of that property for the comparison class.

The denotation of the BETWEEN-INDIVIDUAL comparison class is straightforward: it is “extensionally defined as a set of individuals  $y$ , such that  $y$  is  $P$  or related to  $P$  at the world of evaluation” (Gumiel-Molina et al., 2015, p. 29). This can be seen in (104), although I do not discuss it in detail, as it is not the relevant comparison class for *sit*. In (104), I use the subscript *B-I* to represent that the comparison class is defined for the BETWEEN-INDIVIDUALS class, and in (104), I boldface the *for* phrase and its content.

(104) *BETWEEN-INDIVIDUAL comparison class*

$\llbracket \text{CCP}_{B-I} \rrbracket = \lambda y_e. P(y)$

[ after Gumiel-Molina et al. 2015, p. 30 ]

In (104), the standard is evaluated with respect to all individuals  $y$  in the extensional set with the property  $P$ . For the WITHIN-INDIVIDUALS comparison class on the other hand, the standard is evaluated with respect to indices of the same individual, and so it is intensionally defined. This can be seen in (105), where for this intensional definition, a subscripted *w-I* has been added to distinguish it from the extensional one in (104).

(105) *WITHIN-INDIVIDUAL comparison class*

$\llbracket \text{CCP}_{w-i} \rrbracket = \lambda s_e. \forall w' \llbracket [w \mathbf{A} w'] [x \text{ is R(ealized) as } s \text{ at } w' \ \& \ P(x) \text{ or } x \text{ is related to } P \text{ at } s \text{ in } w'] \rrbracket$

[ after Gumiel-Molina et al. 2015, p. 30 ]

It is defined in (105), for all the normal or typical worlds accessible from the evaluation world ( $\mathbf{A}$  is an accessibility relation Asher & Morreau 1995), the comparison class includes different counterparts, i.e., spatio-temporal slices or stages  $s$ , of the same individual  $x$ .<sup>57</sup> In the following, I derive DegP, and then PredP, parallel to LocPP in §5.3.3. The relevant sentence is in (106), and the first step of the derivation in (107).

(106) Phil's backpack sat clean.

(107) *Deriving DegP*

- a.  $\llbracket pos \rrbracket = \lambda g_{\langle e,d \rangle} \lambda P_{\langle e,t \rangle} \lambda x_e [g(x) \geq M(g)(P)]$
- b.  $\llbracket pos \text{ clean} \rrbracket = \llbracket \text{Deg}' \rrbracket = \lambda P_{\langle e,t \rangle} \lambda x_e [\mathbf{clean}(x) \geq M(\mathbf{clean})(P)]$
- c.  $\llbracket pos \text{ clean} \rrbracket (\llbracket \text{CCP} \rrbracket) = \llbracket \text{DegP} \rrbracket = \lambda x_e. [\mathbf{clean}(x) \geq M(\mathbf{clean})$   
 $(\llbracket [w \mathbf{A} w'] [x \text{ is R(ealized) as } s \text{ at } w' \ \& \ P(x) \text{ or } x \text{ is related to } P \text{ at } s \text{ in } w'] \rrbracket)]$

In (107-a), the denotation of *pos* is repeated from (103). At Deg', represented in (107-b), *pos* merges with the interpretation of the adjective, *clean*; this saturates the variable  $g$ . At DegP, represented in (107-c), *pos* merges with the comparison class, *CCP*, saturating  $P$ . The output of (107) is a predicate of individuals. This predicate describes a degree of cleanliness in the evaluation world that is greater or equal to the degree of cleanliness for counterparts of the individual  $x$  in  $w'$ .

Next, Pred is applied to DegP,<sup>58</sup> then merges with the subject argument. This is shown in (108).

(108) *Deriving PredP*

- a.  $\llbracket \text{Pred} \rrbracket = \lambda P_{\langle e,t \rangle} \lambda x_e \lambda e_s [\text{THEME}(x, e) \wedge P(x)]$
- b.  $\llbracket \text{Pred} \rrbracket (\llbracket \text{DegP} \rrbracket) = \lambda x_e \lambda e_s [\text{THEME}(x, e) \wedge [\mathbf{clean}(x) \geq M(\mathbf{clean})$   
 $(\llbracket [w \mathbf{A} w'] [x \text{ is R(ealized) as } s \text{ at } w' \ \& \ P(x) \text{ or } x \text{ is related to } P \text{ at } s \text{ in } w'] \rrbracket)]]$
- c.  $\llbracket \text{Phil's backpack} \rrbracket = b$
- d.  $\llbracket \text{Pred DegP} \rrbracket (\llbracket \text{Phil's backpack} \rrbracket) = \llbracket \text{PredP} \rrbracket = \lambda e_s [\text{THEME}(b, e) \wedge \mathbf{clean}(b)$   
 $\geq M(\mathbf{clean}) (\llbracket [w \mathbf{A} w'] [b \text{ is R(ealized) as } s \text{ at } w' \ \& \ P(b) \text{ or } b \text{ is related to } P$   
 $\text{at } s \text{ in } w'] \rrbracket)]]$

<sup>57</sup>I assume here that the spatiotemporal slice, i.e., the index, of an individual has the semantic type  $e$ . It is also possible to assume that these stages are of type  $s$ , and the input of a CCP is flexible between  $e$  and  $s$ .

<sup>58</sup>Note that Gumiel-Molina et al. (2015) assume a HOLDER thematic role is introduced with the Pred head, while I use here THEME. The choice of theme over holder is consistent with the discussion throughout this thesis, and especially in §2.3.3.

The Pred head in (108) mediates the relation between the subject referent, here a backpack, and a property, here a degree of cleanliness evaluated with respect to the counterparts of that backpack. The output of PredP is integrated with non-literal *sit*, where the ‘stationary’ entailment is contributed and the event argument is existentially bound.

For the literal use of *sit*, which combines with adjunctive depictives, I assume a PredP structure following Gumiel-Molina et al. (2016).<sup>59</sup> In a depictive predicate sentence, there are two eventualities being described, that of the main verb and that of the depictive, or secondary, predicate. As is common in the depictive predicate literature, these sentences are analysed as having a PredP in the structure, and the depictive is instantiated as a sister of Pred. The subject of PredP and the subject of the main verb are the same on their multi-dimensional assumptions. The eligible adjectives that are depictive predicates in Spanish are similar to the adjectival components of *estar*; i.e., these adjectives are interpreted with the WITHIN-AN-INDIVIDUAL comparison class. However, because depictive predicates are secondary predicates which combine with a lexical verb, and adjectival predicates with copular verbs are the main predicates, the insertion of the PredPs differ: for the copular verbs, the PredP is a complement of the verb, accounting for the obligatoriness of the postverbal adjective. For the lexical verbs with depictive predicates, PredP adjoins at V', as can be seen in (109) (s. syntactic arguments in §5.4.2).

Gumiel-Molina et al. (2016) employ the PREDICATIVE ADJUNCT RULE (McNally, 1993, p. 7) to ensure that the intervals of each predicate are cotemporaneous. The sentence in (109) is used to explain the PREDICATIVE ADJUNCT RULE given in (110).

(109) John [<sub>VP</sub> [<sub>V'</sub> danced ] [<sub>AP=PredP</sub> tired]].

- (110) a.  $\llbracket \llbracket \llbracket \text{VP} [ \text{V}' ] [ \text{Pred} ] \rrbracket \rrbracket =$   
 $\lambda x. \lambda e. \text{there is an } e', e'' \leq e \text{ such that } \mathbf{V}(e', x), \mathbf{[Pred]}(e''),$   
 $\text{and } \tau(e) = \tau(e') = \tau(e'')$
- b.  $\llbracket \llbracket \llbracket \text{John} [ \text{VP} [ \text{arrived} ] [ \text{tired} ] ] \rrbracket \rrbracket =$   
 $\lambda e. \text{there is an } e', e'' \leq e \text{ such that } \mathbf{arrive}(e', j), \mathbf{tired}(e'', j),$   
 $\text{and } \tau(e) = \tau(e') = \tau(e'')$

[ Adapted from Gumiel-Molina et al. 2016, pp. 144–5 ]

In (109), the illustrated structure shows that PredP is not a complement of the verb, like with the non-literal use; it is instead a modifier, adjoined to the right, inside the VP. The definition in (110) describes how this is to work semantically. That is, the VP *arrived home tired* denotes two eventualities,  $e', e''$ : that of John arriving home and that of John being tired. The intervals of the two eventualities, represented by  $\tau(e'), \tau(e'')$ , must coincide. This is applied to a literal *sit* sentence in (111).<sup>60</sup>

<sup>59</sup>Gumiel-Molina et al. (2016) assume a multidimensional structure (Rapoport, 1999). This is just one possibility for accounting for the syntax of depictive predicates, as was noted in §5.4.2.

<sup>60</sup>Note that in (110) and (111), the lexical meaning of the adjective and the verb are not represented. In the source text, this is not mentioned, but I keep the simpler representations in order to highlight certain properties of the depictive predicate in combination with a lexical verb: namely, the shared interval and the shared subject.

- (111)  $\llbracket \text{John}_{\text{VP}}[\text{ sat }]\llbracket \text{ tired } \rrbracket \rrbracket =$   
 $\lambda e. \text{ there is an } e', e'' \leq e \text{ such that } \text{sit}(e', j), \text{ tired}(e'', j), \& \tau(e) = \tau(e') = \tau(e'')$

As was the case for the *arrive* sentence in (110), the *sit* example describes two cotemporaneous eventualities. The first one is denoted by the verb, *sit*, and describes the subject in a sitting position. The second, denoted by the depictive predicate *tired*, describes the subject as being in a tired state. This predicate is generated within a PredP with a within-individuals comparison class, like was shown above for *clean*.

In summary, this section has described and argued for the categorisation of literal and non-literal *sit*'s compatible adjectives. For both uses, the content of the adjectives is parallel, as only interpretations which are stage-level-like can combine with each use (§5.4.1–5.4.3). These interpretations are accounted for with comparison classes (§5.4.4). More specifically, I follow Gumiel-Molina et al. (2015, 2016) in assuming that the interpretation of a stage-level-like predicate is due to a WITHIN-AN-INDIVIDUAL comparison class which is generated within the functional structure of the adjectival phrase. The degree of the adjectival property is evaluated with respect to the standard calculated across indices of one individual, i.e., the subject, not across multiple individuals. For both uses, the adjective is generated within PredP.

Although the category of compatible adjective remains the same across the (non-)literal divide, the grammatical status is different, just as the grammatical status of the locative PP is different. That is, the postverbal element of the literal use, a lexical verb, is adjunctive, while the postverbal element of the non-literal use is a predicate. As described in this subsection, the non-literal use's PredP is a complement of the verb. The literal use's PredP denotes the second eventuality of the sentence, i.e., in addition to the main verb's eventuality. For a well-formed sentence containing a depictive predicate with literal *sit*, both eventualities must take place during the same interval. In contrast, in a non-literal *sit* sentence, there is only one eventuality.

## 5.5 Summary

This chapter has built on the insights of the previous ones, and in it the meaning and structure of both uses have been proposed. What can be summarised so far is that literal *sit* combines with an agentive subject (§2.3.3), with the anatomy for assuming and maintaining a sitting position (§2.2.2), while the non-literal use combines with a theme subject (§2.3.3), which can be of various types (§4.1). As was first introduced in §2.1, the literal use of the posture verb can combine with the optional postverbal elements, a location and/or an adjective, while the non-literal use requires a postverbal location or adjective for well-formedness. The optionality of the postverbal category for the literal use in contrast to its requirement for the non-literal one is indicative of a structural difference. In §5.1–5.2 I argued that the literal use is a lexical verb, and the non-literal use is a copular verb. The non-literal structure always contains PredP, as the verb itself is a verbalizer and not predicative. These structural differences not only account for the

omissibility differences in the postverbal component, but in the different thematic roles of the subject: the theme subject of the non-literal use is generated within PredP, and on the raising analysis assumed in this thesis, moves up to reflect the surface order; the agent subject of the literal use is introduced much higher in the structure, i.e., not in PredP, a complement of the verb.

Both of the postverbal elements overlap in content across the (non-)literal divide, but differ in grammatical status. This shared meaning for locations is that for both uses, the location is a stative one; although for a literal use, the sitting eventuality is located with respect to a ground, and for the non-literal use, the subject is located at a ground (§5.3). This difference is reflected in where each locative PP is located structurally, and thereby also where an eventuality is introduced: the literal use's location, an adjunct, attaches VP-externally so that it can modify that VP, and the eventuality variable is introduced by the preposition within LocPP; the non-literal use's location, a predicate, is generated within PredP, and the eventuality is introduced above LocPP, at Pred. The overlapping meaning for adjectives is seen in the commonality of the compatible adjective types: for both uses, the property being described is evaluated with respect to stages of the individual, not with respect to other individuals; these adjectives are generated within PredP for both uses (§5.4). In terms of the structural differences, the adjectives are similar to the locatives, although the formal details differ slightly. That is, for both the literal and non-literal uses of *sit*, the adjective is associated with PredP, but that PredP adjoins to the VP with the literal use, while PredP is the verbal complement of non-literal *sit*.

This and the previous chapters have been concerned with literal and non-literal *sit* from a synchronic perspective. The next two chapters shift the perspective to a diachronic one, with the goal of learning more about the shift from literal to non-literal *sit*.



## Chapter 6

# Diachronic theory and empirical foundations

Up until now, this thesis has concentrated on characterising the synchronic uses of *sit* in English. While, traditionally, semantic phenomena has been examined from both formal and diachronic perspectives, these views are rarely integrated. Recent work from Eckardt (2006) and Deo (2015a,b) has innovated a new, unified, direction: the tools of formal semantics used to develop fine-grained analyses can be unified with methodologies of language change. The present chapter's research goals are to review the literature on diachronic semantics and pinpoint theoretical and empirical gaps with respect to English posture verbs. Following this review, I report a diachronic corpus study which I completed, in order to fill the empirical gap. The next chapter is concerned with attempting to fill the theoretical gap with respect to English *sit*.

In this introduction to the chapter, I give an overview of the data and arguments concerning English *sit* so far, and provide an overview of the present chapter's content. The main points of the synchronic picture are the following. Although the two *sit* uses have similar surface structure, I argue in this thesis that this verb is ambiguous, and that each use comes with its own lexical entry; this was introduced in §2.1. The underlying structural differences between the two uses can primarily be seen in a postverbal-component alternation, such as in the pair in (1).

- (1) *Postverbal omissibility differences*
- |    |   |             |
|----|---|-------------|
| a. | Mattis sat (on the bench pensive).            | LITERAL     |
| b. | <i>Stratego</i> sat *(on the bench unopened). | NON-LITERAL |

As can be seen in (1-a), the literal use of *sit* is able to appear without any postverbal material and still be well-formed. In contrast, the non-literal use in (1-b) requires either a location or an adjective. The corpus data, reported and analysed in Chapter 3, reflect constructed examples like in (1-b), in that no observation of non-literal *sit* is without a postverbal component; the majority of the observations contained postverbal locations, but postverbal adjectives also appeared instead of locations. This data, in combination with the claim in §2.3.3 that non-literal *sit* combines with a theme subject, motivates my arguments in §5.1 that the non-literal use of *sit* is a copular verb, one of many in

English. As was shown in §5.2, the subject and postverbal component are generated in PredP, which is the complement of the verb itself. In contrast, the literal use with its agent subject and optionally postverbal components is a lexical verb; the agent is an external argument and any postverbal material is adjunctive.

On top of these differences between literal and non-literal *sit*, the two uses share core characteristics. For one, both uses are interval statives; this was introduced in §2.3.3. McNally & Spalek (2022) have pointed out that eventive properties such as aspect are preserved across the literal/non-literal divide, while argument structure can change, similar to *sit*, described above. van Gelderen (2018), whose work concerns diachronic trajectories, argues as well that aspectual properties remain stable throughout change.<sup>1</sup> In particular, van Gelderen (2018) examines the diachronic trajectories of English copular verbs, and while she does not concentrate on the posture verbs, insights from her study are applicable to *sit*. I revisit her account in §6.2.3.

In addition to aspect, the shared characteristics of literal and non-literal *sit* include shared meaning. For one, a ‘stationary’ inference, introduced in §2.3.3 and diagnosed as an entailment in §4.2. This entailment of both literal and non-literal *sit* contributes the meaning that the figure is overall not moving from the ground, although non-essential parts of the entity can be moving. Two examples are in (2).

(2) *Shared stationary entailment*

- a. Michel sat on the couch, playing the guitar. #He moved from the couch multiple times.
- b. *Bruttig Daily News* sat on the bench outside, and its pages fluttered in the wind. #During that time, the wind was so strong it blew away the newspaper.

In both examples of (2), the figure is described as being located somewhere and parts of the figure are in movement: for the literal sentence in (2-a) the moving parts are the arms, hands, and possibly a tapping foot; for the non-literal sentence in (2-b) the moving parts are the pages of the newspaper. In neither example, are the felicitous moving parts essential ones, which means that the figure is overall stationary. In both examples, a continuation is included, and this continuation contradicts the ‘stationary’ entailment, albeit infelicitously.

In the discussion of the ‘stationary’ entailment in §2.3.3 and §4.2, another inference was identified as well. I call this inference the ‘idle’ inference. It is strongly present for the non-literal use of *sit*, even without other items encoding the meaning. An example with two continuations, one confirming and one denying the inference, is in (3).

(3) Michel’s guitar sat in his bedroom.

- a. ... he hadn’t touched it in weeks.
- b. #... he played it all the time.

<sup>1</sup>van Gelderen (2018) furthermore argues that argument structure patterns are stable. However, she classifies the original, literal use of posture verbs as unaccusatives, having theme subjects, while I have diagnosed the subjects as agents in §2.3.3.

In the sentence in (3), the guitar is entailed to be overall stationary, not moving from the bedroom. The compatible continuation in (3-a) suggests that on top of being stationary, the guitar is idle. In addition, the continuation in (3-b) is incompatible with idleness and also infelicitous as a continuation of the *sit* sentence. As discussed in §4.2, the ‘idle’ inference is elusive, and an exact diagnosis of this inference is left for future research. Nonetheless, it is clearly present for non-literal *sit*, distinguishable from the ‘stationary’ entailment, and not-at-issue.<sup>2</sup> In §6.1, it is argued that the essential components to many diachronic changes are inferences similar to the ‘idle’ one.

For this chapter, I designed a corpus study which informs my theoretical proposal of English *sit*’s diachronic trajectory in the following chapter. Before designing this, I examined the previous literature on general diachronic change, which is discussed in §6.1, as well as cross-linguistic accounts of ‘sit’, ‘stand’, and ‘lie’ and other copular verbs, discussed in §6.2. These accounts give insights to how English *sit* could have developed, although, as I point out in the discussion, the empirical facts of the synchronic picture of *sit* do not always align with the authors’ proposals of their objects of investigation. In §6.3, I present the diachronic corpus study of English *sit*. The subsequent chapter integrates the theoretical and empirical insights of the present chapter, and in that chapter I propose the stages of English *sit*.

## 6.1 Theoretical approaches to diachronic semantics

This section serves to discuss the background literature on diachronic linguistics, focussing on diachronic semantics. First, in §6.1.1, I present what various authors understand as GRAMMATICALISATION, followed by my assumptions about language change. Within this discussion, I also address the two main strains of research on diachronic change: the formalist one (Roberts & Roussou, 2003; Roberts, 2007; van Gelderen, 2011b, a.o.) and the functionalist one (Traugott & Dasher, 2002; Hopper & Traugott, 2003; Bybee, 2003, 2006, a.o.). Then, §6.1.2, discusses what is currently most often formalised in diachronic semantics: the semantic content of different stages of a change.

### 6.1.1 The many forms of grammaticalisation

In this subsection, I discuss the various associations with common terms in the diachronic literature. First and foremost is GRAMMATICALISATION. Then, I briefly discuss REANALYSIS and BLEACHING. Within each discussion, I outline my own assumptions.

Many definitions are floating around for GRAMMATICALISATION, contributing to some confusion about its definition. Generally “grammaticalisation” involves an expression which

<sup>2</sup>The postverbal adjectives which combine with non-literal *sit*, as observed in the naturally-occurring data seen in Chapter 3 and §4.1, often highlight the idleness of the subject referent.

has changed in some way: original semantic content has changed and/or syntactic independence has decreased. In an overview article on grammaticalisation, Campbell & Janda (2001) loosely summarise the core definition of the concept to be as in (4).<sup>3</sup>

- (4) some linguistic element > more grammatical

Although minimal, this definition does capture what various authors have claimed about CLINES, or paths of grammaticalisation. Depending on the author's focus, either or both sides of the cline may be broken down into more specific elements such as in (5) for the cline, well-known in Romance, shown in (6).

- (5) free lexical item > affix

- (6)      LATIN                      OLD FRENCH                      FRENCH  
*mente* 'in mind' > *absoluta mente* 'in absolute mind' > *absolument* 'absolutely'

In the grammaticalisation path of (6), the evolution of the adverbial suffix *-ment* can be seen for French. It comes from the independent content item *mente* 'in mind' in Latin, which is the ablative of *mens* 'mind' (Campbell, 2001, p. 115). In older French, speakers combined a modifier like *absoluta* 'absolute' with *mente* into a two-word adverbial expression meaning 'in absolute mind'. Eventually, from two-word expressions like *absoluta mente* arose one-word items like *absolument*, wherein the originally independent *mente* became the dependent suffix *-ment*.

The pattern in (6), where syntactic dependence increases when meaning change occurs is a common one. However, other diachronic changes are possible. For example, there can be a meaning shift where no syntactic change necessarily occurs. A case from English is in (7), based on the discussion in Eckardt (2012, §2); the target phrase is boldfaced.<sup>4</sup>

- (7) *premise*<sub>anaphor</sub> > *the premise*<sub>definite NP</sub>  
 a. All which maners, londs, and tenements, and other the **premisses**, we late purchased.<sup>[s]</sup>  
 b. ... We purchased **the premis(es)**<sup>[s]</sup>

[ Eckardt 2012, p. 35 ]

According to Eckardt (2012, p. 35), the older version of *premis(s)e* was an anaphoric element. The older use was often found in estate contexts, like in (7-a), where the word refers a previously-mentioned land possession. The preceding context is indicative of this, with lexical items such as *maners* 'manors' and *lands* 'lands'.<sup>5</sup> In utterances such as (7-b), from the same time as (7-a), the hearer could interpret the word as either an

<sup>3</sup>The concept of UNIDIRECTIONALITY, which indicates that all language changes go in one direction only, is also important in the diachronic literature. As there are counterexamples to unidirectional trajectories (s. Campbell 2001), I assume that this is a tendency, not a law.

<sup>4</sup>The bracketed [s] indicates an endnote on the original source, as provided by the author in the referencing text. This [s] is in contrast to those examples marked with [g], which label sentences from Google searches. Both types of endnotes can be found in the appendix.

<sup>5</sup>In the original text, there are no translations into Modern English. As such, these are by me, KF.

anaphoric element or as a definite NP having the sense ‘a given estate’. Eventually, the anaphoric meaning was lost and now the lexical item is only used as a definite NP. Besides the minor spelling differences common to the time period, there is no morphosyntactic reshuffling or reduction. Nevertheless, it is still considered a case of language change.

In contrast, in (8), there is a syntactic change in addition to—and most likely caused by—the meaning shift of *be going (to)* (Eckardt, 2012). Namely, the older, biclausal, meaning of ‘movement’ plus an infinitive (8-a) was reinterpreted as ‘future intention’ (8-b).

- (8) *be going*<sub>movement</sub> > *be going to*<sub>intention</sub>
- a. Gaizka and Yolanda **are going** to garden.
  - b. Gaizka and Yolanda **are going to** garden after the vermú.

The verb began as a lexical verb with a biclausal structure like *going + to do z*, as in (8-a) where the infinitive is *to garden*. It then became an auxiliary with a monoclausal structure like *going-to do z*, as in (8-b), where *garden* is the lexical verb. This change will be revisited in §6.1.3 below.

The sentences in (6)–(8) all fit the definition of grammaticalisation in (4). With a definition and examples, we can discuss some of the confusion surrounding the term “grammaticalisation”. Sometimes, the term is used to mean that something has become “codified” (Fischer & Rosenbach, 2000, p. 8), often without a formal definition of what that means. This is also where confusion between “lexicalisation” and “grammaticalisation” might arise. I follow, e.g., Traugott (1996) and assume that lexicalisation is part of grammaticalisation, and that some lexical item is added to form a new expression. This has happened for example in *be going (to)*, seen in (8). Another confusion about grammaticalisation concerns the dynamicity of it, because there are still different senses that researchers have for the dynamic view of grammaticalisation (see Campbell 2001, as well as, e.g., Eckardt 2006, 2012; Deo 2015a, 2021 for discussion). Here, “dynamic” is used for causes of a diachronic change; such causes will be addressed in §6.1.2–6.1.3. I understand and use “grammaticalisation” in the broader sense of (4), to indicate that a linguistic element, including expressions, changed their meaning and/or form in some way. It can be assumed that all examples discussed in the remainder of this chapter on diachronic theory are instances of grammaticalisation.

Before closing this subsection, a few words on other concepts which are often found in the diachronic literature, beginning with REANALYSIS.<sup>6</sup> Like with “grammaticalisation” there are various ways that authors use “reanalysis”. Basically, reanalysis concerns two diachronic stages, where an expression is analysed with one meaning as  $\phi_{old}$  at stage  $n$  and as  $\phi_{new}$  at stage  $n + 1$ . The term reanalysis is accredited to Langacker (1977) in the syntactic literature. Timberlake (1977) for example argued that it is the first step in syntactic change, followed by the spread of the reanalysed structure. In these syntactic accounts, surface ambiguity is considered sufficient for a speaker to reanalyse the structure, and the output of this reanalysis could then, in theory, be used by the

<sup>6</sup>This discussion draws heavily from Madariaga (2017).

next generation of speakers. The locus of change lies in child language acquisition, when an aspect of the older grammar is imperfectly inferred via abduction, i.e., imperfectly learned (Andersen, 1973).

Later accounts in the generative tradition (Roberts & Roussou, 2003; Roberts, 2007; van Gelderen, 2011a) still view reanalysis as an important mechanism in diachronic change. However, many criticise the idea that surface ambiguity alone could be a condition for change, as the surface ambiguity is detectable only after reanalysis has occurred (De Smet, 2009). Two different kinds of models proposed to explain the cause of change are “bias-based”, e.g., when learners are biased towards simpler structures in their language (van Gelderen, 2011a) or when learners are biased towards unmarked structures in their inputs (Roberts, 2007, 2012); and “cue-based”, e.g., when sociolinguistic or non-syntactic factors trigger a change in structure (Lightfoot, 1999, 2006).

Usage-based accounts such as Bybee (2006, 2010), and Hopper & Traugott (2003) built on the original idea of reanalysis from the syntactic literature, but these authors argue that the locus of change lies in adult language users and that surface ambiguity is a necessary but not a sufficient condition. The INVITED INFERENCES THEORY (Traugott, 1992; Traugott & Dasher, 2002) is an influential account that explicitly outlines how language users in a community conventionalise deductive inferences in ambiguous contexts. Namely, context is an important factor, but “the mismatch between speaker intention and hearer interpretation” is where the change is located (Traugott, 2012, p. 555). The first researcher to propose an explicitly formal account of semantic analysis involving inferences was Eckardt (2006).<sup>7</sup> Following Deo (2014, 2015a, 2021), I view reanalysis as a static description of an item’s meaning across sequential stages of a cline, without directly committing to the causes of that meaning change.

BLEACHING, i.e., loss of meaning during language, is another term commonly found in the diachronic literature. While it is often the case that an item’s content changes, this term is not precise enough for a semantic account of diachronic change. Accounts that rely on bleaching as a description of linguistic change, especially ones that call bleaching a main mechanism of change, risk ignoring important nuances of a diachronic trajectory. This is because it is difficult to understand how a new use of an item causes a change on its own. As such, I avoid using the term and instead detail an item’s new and old meanings: in §2.3.3 and §4.2, I analysed the inferences contributed by both the literal and non-literal uses of *sit*, i.e., the old and new meanings of *sit*, and in §5.1–5.2 I proposed formal details of each use.

To summarise this subsection: background theory on diachronic theory has been outlined, and my assumptions concerning keywords in the diachronic literature have been laid out. The next subsection discusses literature concerned with describing an item’s meanings at various stages in a diachronic path from a semantic perspective.

<sup>7</sup> Eckardt’s theory of semantic reanalysis, which incorporates Traugott’s insights on inferences, is discussed in §6.1.3.

### 6.1.2 Possible transitions of semantic change

In the current subsection, theory is presented concerning which types of semantic transitions are possible between each stage of a diachronic path. The progressive-imperfective shift, a cross-linguistically robust diachronic change, illustrates the possible transitions. Following Deo (2014, 2015a), I assume that there are overlapping functional meanings, like possession or aspect, that might be encoded in the world's languages. As suggested by “overlapping”, no language encodes each meaning with a separate functional item. This means that in some languages, there are morphosyntactic forms for one or more functional meanings, and the different meanings are disambiguated via context. It is possible for the inventory of functional meanings to undergo change over time, and indeed there are numerous regular patterns of these changes cross-linguistically. Well-known examples are resultative markers developing to include perfect and perfective meaning (Dahl, 1985; Bybee et al., 2004; Condoravdi & Deo, 2014), and items encoding deontic modality evolving to also encode epistemic modality (Traugott & Dasher, 2002). Deo identifies three logical possibilities to semantic changes: (i) an addition of a functional meaning in RECRUITMENT, where an item from the lexical domain is used to fill in a functional gap, creating a new semantic contrast; (ii) a reassignment of meaning in REDISTRIBUTION, where either an item can become the default marker for a meaning in particular contexts (CATEGORIALISATION) or where an item's meaning broadens to include other functional meaning (GENERALISATION);<sup>8</sup> and (iii) a subtraction of a functional meaning in LOSS, thereby eliminating a semantic contrast. As Deo focusses on the transitions (i)–(ii), so will I in this overview; they are summarised in Table 6.1.

TABLE 6.1: Transitions in diachronic semantics (Deo, 2014, 2015a)

Type	Domain	Characterisation
RECRUITMENT	lexical > functional	lexical <i>Y</i> innovated to create a functional semantic contrast: <i>Y</i> with previously-existing <i>X</i>
CATEGORIALISATION	functional	<i>Y</i> becomes obligatory in certain contexts for functional semantic contrast with <i>X</i>
GENERALISATION	functional	meaning of <i>Y</i> broadens to encompass <i>X</i> ; functional semantic contrast gone

Some clines can be characterised by one transition type on their own, such as recruitment in *be going (to)*; we saw this case in the previous subsection and will see it again in the next one. Paths of diachronic change often include more than one type of transition across the various stages, such as in the path of progressive to imperfective markers. There, a morphosyntactic form for progressive aspect is recruited into a language, then its functional meaning is redistributed to include the imperfective function (Deo, 2009,

<sup>8</sup>The term GENERALISATION is often used in the diachronic literature in a similar way to BLEACHING, i.e., to describe loss of meaning throughout a grammaticalisation path (s. §6.1.1). Here, when I say that an item's meaning has generalised, the intended sense is that the item's meaning now encompasses other meanings. That is, aspects of the original meaning are not necessarily lost.

2015b). Across various languages, there are at least three different types of readings for an imperfective form (s. Comrie 1976). These are illustrated in (9) for Gujarati, an Indo-Aryan language. The imperfectively-marked item is boldfaced.

(9) *Three interpretations of an imperfective marker*

- |    |   |             |               |                |                |          |                   |
|----|---|-------------|---------------|----------------|----------------|----------|-------------------|
| a. | niśā  | (atyāre)    | rasod.ā-mā    | rot.li         | <b>banāv-e</b> | ch-e     |                   |
|    | N.NOM.SG  | now         | kitchen-LOC   | bread.NOM.SG   | make-IMPF.3SG  | PRES-3SG |                   |
|    | 'Niśā <b>is making</b> bread in the kitchen (right now).' |             |               |                |                |          | EVENT-IN-PROGRESS |
| b. | niśā  | (roj)       | rot.li        | <b>banāv-e</b> | ch-e           |          |                   |
|    | N.NOM   | everyday    | bread.NOM     | make-IMPF.3SG  | PRES-3SG       |          |                   |
|    | 'Niśā <b>makes</b> bread (every day).'                    |             |               |                |                |          | CHARACTERIZING    |
| c. | niśā  | navsāri-mā  | <b>rah-e</b>  | ch-e           |                |          |                   |
|    | N.NOM.SG  | Navsari-LOC | live-IMPF.3SG | PRES-3SG       |                |          |                   |
|    | 'Niśā <b>lives</b> in Navsari.'                           |             |               |                |                |          | CONTINUOUS        |

[ GUJARATI; Deo 2009, p. 476 ]

In the first imperfective sentence in (9-a), the verb *banāve* 'make' is marked with an imperfective suffix. There is an optional adverbial *atyāre* 'now' which helps the hearer to understand that the relevant reading is "event-in-progress". The second imperfective sentence in (9-b) also contains the verb *banāve* 'make', although with a different optional adverbial, *roj* 'every day'. The relevant reading in this sentence is a general or habitual one, which Deo dubs "characterizing". Finally, in the third sentence in (9-c), there is a different verb *rahe* 'live', which unlike 'make' is a stative predicate. The interpretation in (9-c) is called "continuous" by Deo.

In languages with both progressive and imperfective markers, the former is often associated with an event-in-progress reading (9-a), whereas the latter is often associated with a characterising or continuous interpretation. The difference between these tendencies can also be witnessed in the English translation of the sentences: in (9-a) progressive morphology is used, while in (9-b)–(9-c) the simple present is used.

Leaving English aside, we return to the trajectories of languages which are undergoing (e.g., Turkish or Yoruba; s. Comrie 1976; Dahl 1985) or have undergone (e.g., Gujarati; s. Deo 2009, 2015b) the progressive–imperfective shift over the past centuries. The stages of the shift are schematised in Table 6.2, where the transition type column indicates the transition needed to reach the relevant stage.<sup>9</sup>

<sup>9</sup>It is important to remember that such shifts can take place over centuries—not instantly or spontaneously.



TABLE 6.2: The Progressive–Imperfective Shift (Deo, 2009, 2015b)

	Stage	Forms present	Transition type
I.	zero-PROG	$X_{\text{IMPF}}$	–
II.	emergent-PROG	$(Y_{\text{PROG}}), X_{\text{IMPF}}$	RECRUITMENT
III.	categorical-PROG	$Y_{\text{PROG}}, X_{\text{IMPF}}$	CATEGORISATION
IV.	generalised-PROG	$Y_{\text{IMPF}}$	GENERALISATION

In the first stage of the progressive–imperfective shift, there is no progressive marker and thus no way to morphologically mark the semantic contrasts illustrated in (9). Instead, there is only the imperfective marker, represented in Table 6.2 as  $X_{\text{IMPF}}$ . When speakers want to encode an event-in-progress reading at this stage, they might use an adverbial like ‘right now’ or ‘at that time’ to disambiguate this reading from a characterising or continuous reading, like in the Gujarati sentence in (9-a). Another option is to recruit lexical material to create a periphrastic progressive construction, represented in Table 6.2 as the progressive marker  $Y_{\text{PROG}}$ . Cross-linguistically, this is typically a combination of posture verbs or prepositions (Bybee et al., 2004). Over time the language progresses from Stage I to II, and the form for an event-in-progress  $Y_{\text{PROG}}$  becomes conventionalised, so that  $Y_{\text{PROG}}$  becomes reliably associated with the event-in-progress meaning. Note that at this point, it is still optional for a speaker to use the newly emerged item  $Y_{\text{PROG}}$ . In other words, speakers can either use a linguistic device like ‘right now’ or the newly acquired  $Y_{\text{PROG}}$  form in order to make the functional semantic contrast in to Stage II.

In the transition from Stages II to III,  $Y_{\text{PROG}}$  is used more and more often to encode an event-in-progress, to the extent that this new form becomes obligatory for the interpretation. That is,  $X_{\text{IMPF}}$  will not be found in event-in-progress contexts. Stage III, categorical-PROG, is the only stage without ambiguity: there is a form  $Y_{\text{PROG}}$  for events-in-progress and a form  $X_{\text{IMPF}}$  for characterising or continuous readings; both are obligatory in their respective contexts. This changes in Stage IV.

The transition from Stage III to Stage IV involves  $Y_{\text{PROG}}$  being used in contexts to encode characterising or continuous interpretations, in addition to events-in-progress. The functional semantic contrast is eliminated. Eventually,  $Y$  is the only form to encode either characterising/continuous or events-in-progress, and the older form  $X$  disappears from use. To differentiate between the two readings of  $Y_{\text{IMPF}}$  speakers in the generalised-PROG stage will have to rely on context to disambiguate between readings, just like speakers of a zero-PROG stage did. In this way, the trajectory is potentially cyclical in nature.

The progressive–imperfective shift as presented above exemplifies three possible transitions in any grammaticalisation path. While this shift is typologically attested, not all grammaticalisation paths are necessarily the same. For one, it does not necessarily follow that a language which lacks a progressive form, will soon develop a marker for this functional meaning. Regardless of how the trajectory of any change looks, it is important to remember that the transitions described in this subsection are not what is motivating the respective change. Instead, these transitions are intended to be descriptions of the

static relationships between each stage. The next subsection presents a case study of recruitment, where the pragmatic factors driving the transition are identified. That is, in the next subsection, a static analysis is presented in addition to a dynamic one.

### 6.1.3 Recruitment and the conventionalisation of inferences

This subsection addresses what Deo (2014, 2015a) calls the dynamic component of semantic change. In contrast to the structural component, which characterises the synchronic variation of competing forms, a dynamic approach proposes which factors contributed to a semantic change. From this viewpoint, another way to conceptualise diachronic paths is as concatenated pragmatic strategies.<sup>10</sup> As is argued in Chapter 7, I analyse the diachronic trajectory of literal to non-literal *sit* as a case of recruitment. For this reason, in this subsection I present a case study of recruitment, including an analysis of the pragmatic strategies, and not case studies of generalisation, categorisation, or a combination thereof.

The first type of transition discussed in §6.1.2 is recruitment. The change concerns a lexical item being “recruited” to have a functional meaning, and the transition can be described as being driven by a conventionalisation of inferences among the language users. An account of usage-based meaning change was first proposed by Traugott & König (1991) and Traugott & Dasher (2002), later formalised in compositional semantics by Eckardt (2006). The stages of recruitment, based on Eckardt’s theory of semantic change under reanalysis, are outlined in Table 6.3, where  $\phi_{old}$  represents the item with its original meaning and  $\phi_{new}$  represents said item with its new meaning.<sup>11</sup>

TABLE 6.3: Recruitment in action

I.	$\phi_{old}$ + inference conventionalises to become $\phi_{new}$	
	a. inference arises in a specific context	INVITED INFERENCE
	b. new meaning is used outside specific context	GENERALIZED INFERENCE
II.	Composition of utterances changes wrt $\phi_{new}$	REANALYSIS
III.	New meaning expands	ACTUALIZATION

As seen in Table 6.3, in Stage I of a change, utterances with the original meaning  $\phi_{old}$  of an item undergo pragmatic enrichment.<sup>12</sup> First, in Stage Ia, specific contexts “invite”

<sup>10</sup>However, these strategies are rather unconscious than conscious for the language users in a community.

<sup>11</sup>The final column of the table includes terms from other authors, referenced later in the text; I have kept them, as they are potentially helpful for readers more familiar with the literature on which Eckardt’s theory builds.

<sup>12</sup>Although Eckardt (2006) does not focus on this, a related concept is MARKEDNESS. Here, I follow Horn (1984) and Deo (2015a,b) and assume that a marked expression is one (i) that has a counterpart with the same truth-conditional meaning and (ii) which is more complex and/or less lexicalised than that counterpart. For *be going to* and *will*, both encode a future marking but the former is marked and the latter unmarked. Markedness is relevant again for the diachronic trajectory of *sit*, as proposed in Chapter 7.

inferences;<sup>13</sup> then in Stage Ib, speakers use the inference, to the point that  $\phi_{new}$  is consistently associated with the target item. Then, the inference becomes conventionalised or what is known as “generalised” (Traugott & Dasher, 2002). Another way to understand the inference aspect of recruitment is that when a language user is confronted with an utterance that might give rise to certain inferences, “they are likely to reinterpret parts of this structure in such a way as to make the pragmatic implication part of the literal content” (Deo, 2015a, p. 186). Although there is no consensus for a systematic point of conventionalisation, Eckardt (2006) does note another condition for change, beyond the conventionalisation of inferences. Namely, the surface form of the utterances containing the old and the new meanings must have ambiguous surface structure, so that reanalysis can take place; this is Stage II in Table 6.3.

Reanalysis is a reinterpretation operation, which means that  $\phi_{new}$  has a different interpretation than  $\phi_{old}$ .<sup>14</sup> That is, syntactic change may or may not occur with reanalysis. What happens is that a hearer determines how to reinterpret the sense of the target item based on the known overall meaning, and they “guess meaning by subtraction” (Eckardt, 2011, p. 35). This operation is performed unconsciously by adults, and eventually is done by many speakers. Once reanalysis has occurred, i.e., the new meaning  $\phi_{new}$  has been acquired by language users in a community, actualization in the sense of Timberlake (1977) can occur; this is represented as Stage III in Table 6.3. This is when speakers can expand the use  $\phi_{new}$  to various contexts.

For illustration of the stages in recruitment, I use *be going (to)*, which we already saw in the previous subsections. This item is reanalysed from biclausal *be going*, meaning ‘movement’, to monoclausal *be going to*, meaning ‘intention’, as shown in (10). In the example, PROSP represents ‘prospective aspect’, after the representation in Deo (2015a).

(10) I am going to buy bread.

- |   |              |
|---|--------------|
| a. [PRES [PROG [I go [to buy bread VP]VP]]] | $\phi_{old}$ |
| b. [PRES [PROSP [I buy bread VP]]]          | $\phi_{new}$ |

In the original meaning  $\phi_{old}$ , shown in (10-a), the first verb in progressive, i.e., *be going*, was part of its own clause and the second, *to buy*, was the embedded infinitival clause, and each verb represents a separate eventuality. In the new meaning  $\phi_{new}$ , shown in (10-b), the first verb, *go*, in the progressive is an aspectual marker for prospective aspect. This aspectual marker is part of the same clause as the second verb, *buy bread*. Importantly, there is only one eventuality described by the two verbs.

For *be going (to)*, Eckardt proposes that the diachronic change had its source in the theatre starting at around 1550, when English had no means of encoding prospective aspect. She proposes Stage Ia occurred in contexts where actors in a play spoke about actions using the present progressive. Crucially, across the scene changes of a play, it would

<sup>13</sup>Traugott (2018) discusses how “invited inference” was chosen for its specific associations: that speakers communicate with hearers and hearers respond to speakers; that language users are the ones who enable change; and that language change requires both perception and production.

<sup>14</sup>See also §6.1.1 on different authors’ assumptions about reanalysis, and what I assume here.

not have necessarily been clear to the audience member, i.e., the hearer, whether the speaker actually moves through space to perform the action. When a speaker uttered a sentence like the one in (10), the hearer might infer ‘seen from now, the proposition that the speaker buys bread will soon be true’. Eckardt calls this inference of encoding ‘imminence’ (Eckardt, 2012, p. 2865). At this point, the inference is still an occasional one, and the hearers are interpreting it based on pragmatic reasoning each time the inference is encountered.

Stage Ib, then, is what happens once the inference is used with the construction more and more consistently. An inference becomes more common and thus unmarked, eventually becoming conventionalised.<sup>15</sup> For (10), this means that speakers used *be going to* in every day conversations, producing the new variant and not just perceiving it in more plays. An important part of the diachrony of *be going (to)* is when the inference becomes temporally anchored. That is, when the inference goes from ‘seen from now, the proposition that the speaker buys bread will soon be true’ to ‘seen from the reference point, the proposition that the speaker buys bread will soon be true’. Semantic reanalysis can occur, now that the inference is a part of the literal content of the item’s new meaning.

At this point, the surface forms of the sentences containing the old and new meanings are identical, and Stage II is possible. This stage comprises a reanalysis of the structure based on the new meaning of the item, and once a new composition has been assigned, the inference is considered to be part of the literal content. Eckardt emphasises the principle of compositionality, i.e., that a sentence’s meaning comprises the meaning of its parts as they combine according to syntactic principles. She proposes that speakers guess by subtraction the composition of the new meaning. Her model is in (11), where  $\oplus$  represents a general semantic composition operator (s., e.g., Eckardt 2011, p. 35) and  $\langle X \rangle$  represents the lexical item which is reanalysed.<sup>16</sup>

$$(11) \quad \llbracket S \rrbracket = \llbracket w_1 \rrbracket \oplus \cdots \oplus \llbracket w_{j-1} \rrbracket \oplus \langle X \rangle \oplus \llbracket w_{j+1} \rrbracket \oplus \cdots \oplus \llbracket w_k \rrbracket$$

In the representation of (11), the meaning of a sentence,  $S$ , is equated with the composition of meanings of the sentence’s parts. The parts, or constituents, are represented by  $w$ , each marked with a subscript corresponding to their order in the sentence; this order is dictated by rules of syntactic composition. The missing value,  $\langle X \rangle$ , would correspond with  $w_j$ , once its semantic value is calculated based on the meaning of the rest of the sentence.

$$(12) \quad \llbracket \text{I am going to buy bread} \rrbracket =$$

a.	$\llbracket \text{I} \rrbracket \oplus \llbracket \text{PRESENT} \rrbracket \oplus \langle X \rangle \oplus (\llbracket \text{to buy bread} \rrbracket)$	‘movement’
b.	$\llbracket \text{I} \rrbracket \oplus \llbracket \text{PRESENT} \rrbracket \oplus (\langle X \rangle \oplus \llbracket \text{buy bread} \rrbracket)$	‘imminence’

[Adapted from Eckardt 2011, p. 35]

<sup>15</sup>Note that common and unmarked is not necessarily the opposite of salient. That is, language users might unconsciously comment on the inference, but in this stage they also will produce the inference—mostly unconsciously (Traugott, 2012, p. 555).

<sup>16</sup>Of course, this is a very simplified representation. Those readers interested in the full compositional details of *be going (to)* should refer to Eckardt (2006, §4).

In (12-a), <X> represents the old meaning of ‘movement’. The surface structure of <X><sub>old</sub> is *be going*. If a hearer infers <X> as meaning ‘imminence’ instead of ‘movement’, they will calculate <X>’s composition based on the other parts of the sentence. First, they would calculate the known elements, i.e., the rest of (12-b), and then calculate <X><sub>new</sub> as *be going to*. Once more and more speakers reanalyse the item’s composition like (12-b), the new meaning spreads throughout the community.

The actualization, or Stage III, of *be going to* can be seen in the expansion of combinations to include activities where no movement is needed for the imminent action, immovable subjects, and expletive subjects (Eckardt 2006, p. 243; s.a. Hopper & Traugott 2003). An example of this from 1657 can be seen in (13).

(13) When you are going to lay a tax upon the people ...<sup>[s]</sup> (Eckardt, 2006, p. 94)

It is clear that no part of (13) encodes movement, in that declaring a tax is not an activity entailing motion. Eckardt uses this and other examples beginning from 1650 to show that reanalysis had finished and Stage III was underway.

This subsection has presented a case study of the transition recruitment, where the pragmatic strategies of language users caused the transition to happen. In the case of *be going*, the relevant inference is ‘imminence’. An important element of understanding this dynamic component lies in pinpointing the onset context of the recruitment transition. Once this is identified, it is possible to describe the inferences which are responsible for recruitment to occur. This manner of analysis is utilised in my own proposal in §7.1. Before my own proposal, however, we will examine the previous literature on posture verbs cross-linguistically and related copular verbs in English.

## 6.2 The clines of cross-linguistic ‘sit’ and other English copular verbs

The class of posture verbs is widely discussed in the historical literature, because these verbs are common objects of meaning change, often known to develop into aspectual markers (Kuteva, 1999; Heine, 2003; Hopper & Traugott, 2003; Newman & Rice, 2004, a.m.o.). Here, “aspectual marker” is understood as a lexical item which primarily carries aspectual information and whose non-aspectual semantic content has been reduced, partially or completely. If they appear as a verb, aspectual markers are not the main verbs of the utterance; in those cases the aspectual marker is represented as V1, and the main verb as V2. Examples from different language families are found in (14), with the posture verb boldfaced.<sup>17</sup>

<sup>17</sup>Literal translation for (14-a) and (14-c) by me, KF, based on the gloss in the source text. Unless otherwise noted, literal translations in the rest of the section are also by me.

(14) *Posture verb > aspectual marker*

- a. Jag **satt** naturligtvis inte helt passivt och väntade på ett samtal  
 I **sat** naturally not wholly passively and waited on a talk  
 (lit. ‘Naturally, I didn’t just **sit** passively and wait for a talk/call.’)  
 ‘Naturally, I wasn’t just passively waiting for a talk/call.’  
 [ SWEDISH; Kinn et al. 2018, ex. (4) ]
- b. oay ne-nun mayn nal ttwuimcil man ha-ko **anc-e-iss-nya**  
 why you-TOP every day running only do-CONJ **sit-FOC-is-Q**  
 (lit. ‘Why are you **sitting** while doing nothing but running?’)  
 ‘Why are you doing nothing but running every day?’  
 [ KOREAN; adapted from Song 2002, p. 369 ]
- c. Ye- **qqim** ye- ttru  
 3SG.M- **sit/remain.PRET** 3SG.M cry.AOR.INTENS  
 (lit. ‘He **sat/remained** crying.’)  
 ‘He cries all the time.’  
 [ KABYLE; Naït-Zerrad 1996 via Kuteva 1999, p. 196 ]

In the Swedish sentence (14-a), the progressive aspect is expressed with pseudocoordination<sup>18</sup> where the posture verb *satt* ‘sit’ is the aspectual marker V1 and the verb *väntade* ‘wait’ is the lexical verb V2; V1 and V2 are connected by *och* ‘and’, but, unlike in regular coordination, their order is irreversible. Additionally, the negation expressed by *inte* ‘not’ and the epistemic modality expressed by *naturligtvis* ‘naturally’ scope over both verbs—regardless of the fact that *satt* ‘sit’ is seen before *inte* ‘not’ in the surface structure. In the Korean sentence (14-b), the progressive aspect is expressed in what looks like pseudocoordination: there is the coordinator, *-ko*, which joins the V2 *ttwuimcil* ‘run’ and the respective posture verb V1 ‘sit’; the order of verbs is switched from the Swedish example, but this is due to language differences and not indicative that the posture verb’s status as V1 is different. Song (2002) argues that the posture verb has lost its original meaning, instead carrying aspectual meaning. If ‘sit’ still had the sense ‘being in a sitting position’, the meaning of the entire sentence would be nonsensical, as seen in the literal translation.

In the Kabyle (Algerian Berber) sentence (14-c), the posture verb *qqim* ‘sit’ is used as an aspectual marker; ‘sit’ is the V1 and ‘cry’ is the V2.<sup>19</sup> In this language, the posture verb *qqim* ‘sit’ also has the sense ‘remain’, used in predicative sentences and could be analysed

<sup>18</sup>Pseudocoordination resembles true coordination, in that they both comprise the joining of two verbs with ‘and’, and these verbs have a common subject. However, there are a number of distinctions, including single eventhood; some researchers even consider pseudocoordination to be somewhere in-between coordination and subordination (s. Ross 2016, but see also Carden & Pesetsky 1977; de Vos 2007; Blenseniuss 2015; Biberauer & Vikner 2017; Lødrup 2017; Kinn 2018, a.o.). There is also the general assumption that both verbs have the same inflectional features (Wiklund, 2007; Biberauer & Vikner, 2017), but there are exceptions in at least Scandinavian languages (Blenseniuss, 2015; Kinn, 2017).

<sup>19</sup>The intensive aorist is a Kabyle tense which expresses an eventuality as it is happening, like the present continuous or present perfect; the specific meaning depends on morphological factors, such as whether or not there is a particle (Naït-Zerrad, 1994, p. 39). In (14-c), there is no particle, indicating that the crying eventuality is a habitual or a continuous activity.

as a copular verb (Naït-Zerrad 2001, p. 142; s.a. §5.1 on copular verbs). It is the only posture verb which has undergone meaning change in this language (Kuteva, 2001, p. 63). If *qqim* was the main verb, it would mean that the subject was in a sitting position and crying or that the subject stayed some place crying, but this is not the case: the posture verb only contributes aspectual meaning.

The sentences in (14) are some examples of how a core posture verb can be used as an aspectual marker, and this cline is well-established cross-linguistically. However, this development is not necessarily how posture verbs develop in every language. We will see in this section how in some languages a posture verb can become an aspectual marker in addition to a copula, while in others a posture verb might only develop into an aspectual marker. First, I discuss the widely-cited claims of Kuteva (1999, 2001), then a more recent account on Arabic ‘sit’ (Camilleri & Sadler, 2019, 2020), wherein the authors refute Kuteva’s proposal for Arabic. The work from these subsections come from vastly different perspectives theoretically, but the observations are equally insightful. In addition, it is important to note that these authors focus on describing the structural component only. When possible, I speculate briefly on what the dynamic component might be, depending on the information available.

### 6.2.1 Bulgarian posture verbs (and beyond)

In the cognitive literature on the diachronic trajectory of posture verbs, authors such as Song (2002), Newman & Rice (2004), and Lemmens (2014) build on the claims of Kuteva (1999, 2001), who proposed a diachronic trajectory of posture verbs. The trajectory is summarised in Table 6.4, the details of which are compiled from discussion in Kuteva’s text. Her arguments are based on Bulgarian data, but her proposal is that they are applicable cross-linguistically, explicitly mentioning Germanic languages. In the following, I discuss each of these stages in more detail.

TABLE 6.4: Kuteva’s trajectory of posture verbs

Stage	Available Features			Subject	Clause type
	POSTURE	SPATIAL POSITION	UNBOUNDEDNESS		
I.	✓	✓	✓	human	biclausal
II.	–	✓	✓	inanimate	biclausal
III.	–	–	✓	inanimate	monoclausal
IV.	–	–	✓	(in-)animate	monoclausal

The first column of Table 6.4 enumerates the stage in the trajectory and the next three columns indicate whether a semantic feature is available in that stage. There are three different senses that arise throughout the four stages, and it seems that the leftmost available feature is the most salient. In Stage I, the salient feature is POSTURE, which means the orientation of the subject’s body is encoded. In Stage II, the POSTURE feature has disappeared, and so the most salient feature is SPATIAL POSITION. This presumably concerns

where or how the object is located in space in Stage II, although it remains unclear in the text whether in Bulgarian this feature concerns the location of a figure with respect to the ground, such as with non-literal *sit* in English, and/or orientation of the figure along an axis, such as with non-literal *stand/lie* in English. In Stages III–IV, the most salient feature is UNBOUNDEDNESS, which Kuteva describes as “continuative/durative/progressive” and connects to the “inherent stative semantics” of the posture verbs (Kuteva, 1999, p. 206).<sup>20</sup> The penultimate column details which type of subject is possible. Kuteva (1999) names three possibilities. As can be seen in Table 6.4 these subjects are distributed differently across the stages: human subjects in Stage I, inanimate subjects in Stages II and III, and either inanimate or animate subjects, including animals this time, in Stage IV. Finally, the last column describes which clause type is possible at each stage; that is, in the cases where a posture verb and another, different, verb appear. For the first two stages, this type is biclausal, while for the last two stages, this type is monoclausal.

We now turn to Bulgarian examples illustrating the stages from Table 6.4. In Stage I, the posture verbs are used to describe a human subject in a particular posture. Although these verbs can occur alone, it is not uncommon to describe a person as being in a sitting/standing/lying position while simultaneously engaging in another activity in any language. Utterances like these are biclausal, like in (15), where the posture verb is boldfaced and the second verb is underlined.

- (15) Ana **sedi** na divana i piše pismo, [. . .]  
 Ana sit.3SG.PRES on couch.the and write.3SG.PRES letter  
 ‘Ana is **sitting** on the couch and is writing a letter, [. . .]’ STAGE I  
 [ BULGARIAN; Kuteva 1999, p. 207 ]

In the sentence in (15), the subject of the posture verb ‘sit’ and of the second verb ‘write’ is the referent of *Ana*. She is described as being in a sitting position on the couch and is composing a letter. Although there are no empirical diagnostics provided for this or other examples, this sentence seems to conform to the information in Table 6.4: the POSTURE feature is prominently encoded alongside the less salient SPATIAL POSITION and UNBOUNDEDNESS features, the subject is human, and the structure is biclausal.

In the second stage of the trajectory, the posture verbs are used “to express canonically the spatial position of physical objects” (Kuteva, 1999, p. 207). A Stage II example, with a posture verb in addition to a second lexical verb, is in (16).

- (16) Drexite **sedjat** v koridora i săbirat prax.  
 clothes.the sit.3PL.PRES in corridor and gather.3PL.PRES dust  
 (lit. ‘The clothes **sit** in the corridor and gather dust’) STAGE II  
 ‘The clothes are in the corridor and gather dust.’  
 [ BULGARIAN; after Kuteva 1999, p. 207 ]

<sup>20</sup>This aspectual combination is interesting. In at least English, and possibly in other Germanic languages, posture verbs are analysed as interval statives (§2.3.3). These statives share the homogeneity of states, but the interval of an interval stative is understood to be bounded, not unbounded.



In (16), the subject of the utterance is ‘clothes’, an inanimate noun and the referents of these clothes are described to be located in the relevant corridor for an unspecified amount of time. In addition to their position in the corridor, they are described to be in a state of gathering dust. Like in the Stage I sentence above, this is a coordinated biclausal structure, describing two simultaneous eventualities. With that, the sentence reflects the claims in Table 6.4 for Stage II.

For Kuteva, Stage II is considered to be the crucial stage of the trajectory.<sup>21</sup> She proposes that it is only possible for further change on two conditions: if the posture verbs are being used with inanimate subjects and if they are the verbs used most commonly used to describe spatial position. At this point in the trajectory, a sentence like (16) has an ambiguous surface form, between a coordinated biclausal structure and a monoclausal one. The two structures are sketched in (17), representing the sentence in (16); these are based on the structures from Kuteva (1999, p. 208).

(17) *Locus of change in Kuteva’s trajectory*

- |    |  |           |
|----|--|-----------|
| a. | The clothes [ <u>sit</u> in the corridor ] and [ <u>gather</u> dust ]. | STAGE II  |
| b. | The clothes [ <u>sit</u> in the corridor and <u>gather</u> dust ].     | STAGE III |

According to Kuteva (1999) the Stage II structure in (17-a) is biclausal, with two separate eventualities being encoded, while the Stage III structure in (17-b) is monoclausal, with only one eventuality encoded. Note that ‘in the corridor’ is described as an adverbial in the text, and there is no further comment or empirical support concerning the argument structure requirements of the posture verb—in that or in any stage.<sup>22</sup> In any case, the Stage III variant of (16) is found below in (18), where the translation from the text is indicative of the new use of ‘sit’.

- (18) Drexite sedjat i sãbirat prax.  
 clothes.the sit.3PL.PRES and gather.3PL.PRES dust  
 (lit. ‘The clothes sit and gather dust’)  
 ‘The clothes are gathering dust all the time.’
- STAGE III

[ BULGARIAN; after Kuteva 1999, p. 208 ]

The final stage of Kuteva’s proposed trajectory is where animate entities, both humans and non-humans, are able to appear as subjects of the aspectual marker posture verbs. Although these sentences might resemble the Stage I example in (15), with two verbs and the conjunction *i* ‘and’, Kuteva argues that the posture verb is now only functioning as an aspectual marker V1, while the second verb is the lexical verb, V2. Two examples are in (19).

<sup>21</sup> Kuteva (1999, p. 208) argues that the “loss of the specific ‘human body’ semantics” is what enables reanalysis.

<sup>22</sup>Based on literature reviewed in §2.3, it might be expected that a locative phrase is required for the Stage II verb in Bulgarian, but not when the posture verbs become Stage III aspectual markers. This change in argument structure is suggested, but not further developed, in the text: Kuteva (1999, p. 209) only states that “adverbials come to be used peripherally rather than in between” the two verbs.

- (19) a. Bašta mu prez cjaloto vreme **stoi** i mǎrmori.  
 father his through whole.the time **stand.3SG/PRES** and grumble.3SG.PRES  
 (lit. ‘Through the whole time his father **stands** and grumbles.’)  
 ‘His father continuously grumbles.’ STAGE IV
- b. **Sedi** i se oplakva vmesto da se xvane za  
**sit.3SG.PRES** and REFL complain.3SG.PRES instead to REFL take.3SG.PRES for  
 rabota.  
 work  
 (lit. ‘S/he **sits** and complains instead of taking themselves to work.’)  
 ‘S/he is complaining all the time instead of starting to work.’ STAGE IV

In both sentences of (19), there is a human subject and two verbs, including one posture verb. Both sentences have an aspectual meaning contributed by the respective posture verb. In (19-a), the aspect is translated as ‘continuously’ with the simple present, and in (19-b) it is translated as ‘all the time’ with the progressive.<sup>23</sup> Both sentences of (19) are said to have a monoclausal structure like in (17-b).

In this subsection, I have presented the proposal by Kuteva (1999, 2001) for a POSTURE VERB > ASPECTUAL MARKER cline. The stages are summarised in Table 6.5; the row highlighted in grey represents the crucial stages of the trajectory, according to Kuteva.

TABLE 6.5: The “‘sit’/‘stand’/‘lie’ auxiliation” (Kuteva, 1999, 2001)

Stage	Sense	Subject type	Clause type
I.	posture	human	biclausal
II.	spatial position	inanimate	biclausal
III.	aspect	inanimate	monoclausal
IV.	aspect	(in-)animate	monoclausal

According to Kuteva’s proposal, the core posture verbs develop from the literal posture sense in Stage I to the locative sense with inanimates in Stage II. From in Stage II, where there is a posture verb and another lexical verb, the aspectual sense of Stages III–IV is able to develop. She argues that without Stage II-type sentences, i.e., posture verbs with inanimate subjects, a development into aspectual markers would be impossible.

Kuteva’s account has a different focus than the case study presented in §6.1.3: while she describes the structural relationship between the different stages, there is no discussion of what might have motivated the transitions. However, we could speculate that the transition type from Stage I to II and from II to III are recruitment transitions, because in each case the lexical posture verb acquires a different functional meaning, and in the discussion of the transition to Stage III, Kuteva mentions ambiguity of the surface form, which is an important aspect of semantic reanalysis, and thereby of recruitment. The final transition from Stage III to IV could be classified as generalisation, because the

<sup>23</sup>The translations of (18)–(19), with posture verbs-as-aspectual markers, suggest a negative evaluation is present. It would be interesting to know whether this is tied to the non-neutral examples (clothes gathering dust, somebody grumbling, somebody complaining), or if the aspectual markers can be translated in a parallel way with a neutral example (e.g., somebody working).

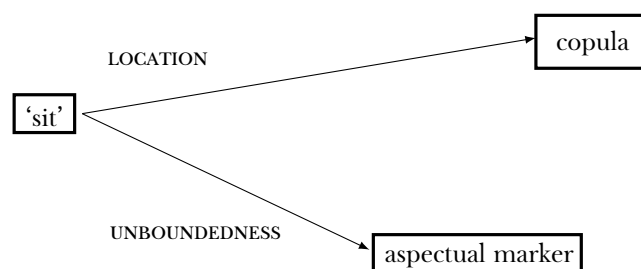
functional meaning expands to include a different subject type. From what we know from the case study in §6.1.3, it is often the conventionalisation of inferences within a community that cause a recruitment change to occur. In this way, it might be possible to say that the transition from Stage I to II concerned an inference of ‘unboundedness’. However, without more data, this is where the speculations end.

In the next subsection, we look at another proposal for the structural component of the diachronic change of a posture verb, this time in Arabic. Although many authors build on Kuteva’s proposal, there have been counterexamples to this point, showing both that posture verbs do not have to be the most frequent way to encode spatial position and/or location of inanimate objects, and that animate subjects are in intermediate stages of the trajectory (s.a. Song 2002 on Korean and Kinn et al. 2018 on Scandinavian languages). In addition, the account in the next subsection includes data demonstrating a path more similar to English *sit*, in that Arabic *sit* also develops into a copular verb (s. Chapter 5).

### 6.2.2 Dialectal variants of Arabic ‘sit’

The account presented in this subsection concentrates on ‘sit’ only, and in it, Camilleri & Sadler (2019, 2020) argue that the trajectory of this posture verb in Arabic develops differently than what has been proposed by Kuteva (1999, 2001). Like Kuteva, Camilleri & Sadler discuss features: in addition to POSTURE in the literal use, there is UNBOUNDEDNESS and LOCATION (cp. UNBOUNDEDNESS and SPATIAL POSITION in Kuteva). However, unlike Kuteva, Camilleri & Sadler propose that the cline of ‘sit’ bifurcates: the UNBOUNDEDNESS feature underscores a path where ‘sit’ develops into an aspectual marker, while the LOCATION feature underscores a path where ‘sit’ becomes a copula.<sup>24</sup> This split path is schematised in Figure 6.1.

FIGURE 6.1: Arabic ‘sit’'s cline, simplified from Camilleri & Sadler (2020, p. 49)



In Figure 6.1, the left-most box represents the original, literal meaning of ‘sit’, when it encodes a human subject in a sitting position. From this original use, two different paths have developed separately. The bottom arrow, labelled UNBOUNDEDNESS, leads to the box representing ‘sit’ as an aspectual marker and it is one of two verbs in the VP, similar to what we saw for Bulgarian in the previous subsection. The top arrow, labelled LOCATION,

<sup>24</sup>Kuteva does mention cross-linguistic data where the verbs are used as copulas, but explicitly states that the Germanic verbs have not been proposed to develop into copulas (Kuteva, 1999, p. 206). It is implicit in that discussion that for Kuteva, Bulgarian posture verbs also do not become copulas.

leads to the box representing the copula sense, where ‘sit’ is the only verb in the VP. The two paths are explained in more detail in the following.

In Camilleri & Sadler (2019, 2020) the target item is the active participle of the posture verb ‘sit’ in Arabic, with data from various dialects. The participle is most often realised as *gāʿid*, although there are sometimes phonological variants. Because of the presence of these variants, I use SIT to represent the lemma across the diachronic stages, both in the gloss and in the text. The sentence in (20) is an example of SIT with the original posture use. Note that because the divide between “literal”-“non-literal” is more complex than in English, and because it is not addressed in the text, I label the different uses with the prominent feature according to Camilleri & Sadler; in (20) this is POSTURE.

- (20) niswān **gāʿid-in** hinī.  
 women SIT.ACT.PTCP-PL here  
 ‘Women are sitting here.’ POSTURE

[ GULF ARABIC; Isaksson et al. 2009, cited in Camilleri & Sadler 2020, p.23 ]

In (20), the subject of SIT is two or more women. The sentence describes the group of females as being in a sitting position in a particular location.

In the next sentence (21), from a Saudi Arabian dialect of Arabic, the participle is used as an aspectual auxiliary encoding UNBOUNDEDNESS, seen in the trajectory at the bottom of Figure 6.1 above. As Kuteva does, Camilleri & Sadler consider UNBOUNDEDNESS to be representative of the “inherent stativity and temporal unboundedness” of the posture verb (Camilleri & Sadler, 2020, p. 21), and they translate it as progressive aspect.

- (21) Nora **gāʿid-a** ta-rgis maʿa asdig-at-ā fi il-ḥafla  
 Nora SIT.PROG-SG 3F-dance.IMPF.SG with friend-PL.F-3SG.F.GEN in DEF-party  
 (al-ḥin).  
 DEF-time  
 (lit. ‘Nora is **sitting** dancing with her friends at the party (now).’)  
 ‘Nora is dancing with her friends at the party (now).’ ASPECT

[ HASAWI ARABIC; Al-Abdullah 2016, cited in Camilleri & Sadler 2020, p. 6 ]

In (21), the referent is a human, who is described as dancing at the utterance time. Camilleri & Sadler (2020) use examples such as (21) to show not only that SIT can develop into an aspectual auxiliary, but also to show that the original POSTURE feature of the meaning is no longer present in the new, aspectual use.<sup>25</sup> In other words, there remains little or none of the sense ‘to be in a sitting position’; if there was any of that sense, it would be impossible to combine the V1 SIT with a V2 like ‘dance’. Instead the verb gains functional meaning, encoding aspect. Camilleri & Sadler hypothesise this path of becoming an aspectual marker is the older path of the two, confirming this with synchronic data where the aspectual marker can occur with less restrictions than the copula forms (Camilleri &

<sup>25</sup>In some dialects, the POSTURE feature is still present to some degree. Whether or not SIT retains the POSTURE feature in a later stage does not undermine their proposal.

Sadler, 2020, p. 51); in those cases SIT can combine with non-human subjects in many Arabic dialects.

In terms of Deo (2014, 2015a), from the discussion in §6.1.2, the cline going from the posture use of ‘sit’ to the aspectual use represents a recruitment transition, because a lexical word was recruited for a functional use. Camilleri & Sadler (2020, pp. 11–12) also discuss how this change fits into the Imperfective Cycle proposed by Deo (2015b). A crucial part of the recruitment transition is reanalysis, like we saw in §6.1.3. Camilleri & Sadler also discuss reanalysis, although with a strong focus on syntactic reanalysis. They do not directly discuss inferences, but the text suggests that the new, aspectual meaning arose due to an inference of ‘unboundedness’, wherein the posture verb began to be used to express not concomitant eventualities, but in-progress ones. Camilleri & Sadler argue that the onset contexts for the change to an aspectual auxiliary contain verbs lexically compatible with the original POSTURE feature and circumstantial adjuncts, like *yəkol* ‘(while) eating’ in (22).<sup>26</sup>

- (22) wəħid qāfīd yə-kol.  
 one.SG.M SIT.ACT.PTCP.SG.M 3M-eat.IMP.F.SG
- a. ‘Somebody is **sitting** and eating/sitting while eating.’ POSTURE
- b. ‘Somebody is eating.’ ASPECT
- [ TUNISIAN ARABIC: Saddour 2009, cited in Camilleri & Sadler 2020, p. 4 ]

In the sentence in (22), there are two verbs, glossed as the active participle SIT and the imperfective verb ‘eating’. In the older use of SIT, as depicted in (22-a), the interpretation is that the referent of the subject is in a sitting position and is simultaneously eating something. For this interpretation, SIT is the main predicate of the sentence and ‘eating’ is a circumstantial adjunct. In the newer, aspectual use in (22-b), the interpretation is that the referent of the subject is eating, and POSTURE is not necessarily encoded. Rather ‘eating’ is the main verb, and the only verb to deliver lexical content; SIT is the aspectual marker, encoding UNBOUNDEDNESS.<sup>27</sup>

Now that we have seen the trajectory of SIT based on UNBOUNDEDNESS, we will look at the other, currently ongoing, trajectory based on LOCATION. Camilleri & Sadler (2019, 2020) argue that this trajectory can be broken down into different stages, seen in (23).<sup>28</sup>

<sup>26</sup> Circumstantial adjuncts are a common way in Arabic to encode concomitant events, and Camilleri & Sadler (2020, p. 4) note that they are similar to *while* adjuncts. Circumstantial adjuncts may be similar to depictives; s. §5.4.1, although they are not linked by Camilleri & Sadler.

<sup>27</sup> The characterisation of the aspectual meaning as “unbounded” is unclear (s.a. FN20), and the argument concerning onset contexts does not elucidate this. For the case of Arabic, it is argued that the onset context of the change comprises an adjunct associated with simultaneity of the main event. From the discussion of (22), it seems that the interval of the adjunct’s eventuality constrains that of the main predicate’s eventuality; in that case this would no longer be an unbounded eventuality, but a bounded one.

<sup>28</sup> It should be noted that Camilleri & Sadler mention another branching out, from Stage II to what they call a lexical existential predicate found in at least two dialects. This use of SIT is translated to mean ‘be (there), be present, exist’ (Camilleri & Sadler, 2020, p. 47) and is said to involve intransitivisation. An example is in (i). Although this use is interesting, I do not include the stage in the present discussion because they do not discuss examples like this in the same detail as the other stages. It is furthermore unclear whether this use might not just be a later version of the copula.

- (23) STAGE I            II                                    III            IV  
           ‘sit’ > ‘stay/remain’<sub>LOC</sub> > ‘be’<sub>LOC</sub> > ‘be’

The first stage of (23) is the literal, posture use we saw in (20). The semantic difference between Stages II-III is subtle, as we will see in the examples below, but the important structural distinction from Stage I is that in Stages II-III *sIT* requires a locative component.<sup>29</sup> These stages contain a subscript, *LOC*, reflecting that a location is required with *sIT* in those stages. In contrast, in the final stage *sIT* is a full copula, which can take other kinds of postverbal categories, in addition to locative ones.<sup>30</sup> Camilleri & Sadler show that this newest sense of *sIT* is a temporal copula, and it is in complementary distribution with other copulas.

The sentences in (24) are examples of Stages II-III. In all, *sIT* is boldfaced and the location is underlined.

(24) *Intermediate stages of the locative trajectory*

- a. hūwa lāgi                                    l=ǰeww                                    mlīh            fa gāʕəd  
    he    find.ACT.PTCP.SGM DEF-ambiance.SG.M good.SG.M so **sIT**.ACT.PTCP.SG.M  
    yādi.  
    there  
    (lit. ‘He found that the ambiance is good, so he is **sitting there**.’)  
    ‘He found that the ambiance is good, so he is staying there.’                                    STAGE II  
    [ LIBYAN ARABIC; Pereira 2008, cited in Camilleri & Sadler 2019, p. 41 ]
- b. ʕādi    kull wāhid    **gāʕid**                                    b-bēt-uh                                    wa ma  
    normal all    one.SG.M **sIT**.ACT.PTCP.SG.M in-house-3sg.m.GEN and NEG  
    le-h                                    šuyl            tāni  
    have-3SG.M.GEN job.SG.M other.SG.M  
    (lit. ‘It’s normal, everyone is **sitting in his house**, having no other job.’)  
    ‘It’s normal, everyone is staying in his house, having no other job.’                                    STAGE II  
    [ KUWAITI ARABIC; Persson 2009, cited in Camilleri & Sadler 2019, p. 26 ]
- c. humma **gāʕid-in**                                    fī in magt aʕ.  
    they    **sIT**.ACT.PTCP-PL remote-area.SG.M  
    (lit. ‘They are **sitting in a remote area**.’)  
    ‘They are in a remote area.’                                    STAGE III  
    [ URBAN HIJAZI ARABIC; Basulaiman 2018, cited in Camilleri & Sadler 2020 ]

- (i) mūsa    **gāʕid**  
    moussa **sIT**.SGM  
    (lit. ‘Moussa sits.’) ‘Moussa is (there)/exists.’                                    EXIST

[ CHADIAN ARABIC; Rubin (2005), cited in Camilleri & Sadler 2020, p. 47 ]

<sup>29</sup>On the clearly copular uses, Camilleri & Sadler call these locatives predicates, however on their definition of copular verbs, the use meaning ‘stay/remain’ is a lexical verb with takes a locative argument. According the assumptions in this thesis, laid out for copular verbs and copulas in §5.1.1, the Stage II use would most likely be analysed as a copular verb, not a lexical one.

<sup>30</sup>It is interesting that only the full copula can expand to other postcopular predicates (s. discussion of copulas and copular verbs in §5.1).

In the three sentences of (24), there is only the one verb of the main clause, *gāʿid* ‘sitting’ and there is a location, which Camilleri & Sadler analyse as an argument of the verb. In the Stage II sentence of (24-a), the subject referent of ‘sitting’ is a male person, who is described as ‘staying’ somewhere, although not necessarily while in a sitting position in that place. In another Stage II sentence in (24-b), the subject is ‘everybody’, and they are described as being located in somebody’s house, not necessarily in a sitting position. In addition, the staying-house eventuality is described as an alternative to a working one. In the Stage III sentence in (24-c), the human subjects are described as being located ‘in a remote area’, and again POSTURE is not necessarily encoded. At this point in the trajectory, only human subjects are able to combine with SIT (cp. the SPATIAL POSITION stage in Kuteva’s proposal in §6.2.1, where SIT combines with inanimate subjects).

These three sentences semantically resemble one another, in that the subject is located somewhere for an undefined period of time. For Camilleri & Sadler, it seems that a difference lays in Stage II SIT being a lexical verb, and Stage III SIT being a copula.<sup>31</sup> Camilleri & Sadler (2020, p. 41) note that the ‘stay/remain’ SIT of Stage II “involve[s] a ‘continuative’ (locative) nuance”, and suggest that Stage III SIT retains neither the LOCATIVE nor the POSTURE feature. However, they claim that the argument structure is kept. More precisely, they say that Stage III SIT, a locative copula, “subcategoris[es] a locative complement” (Camilleri & Sadler, 2020, p. 42). This would then suggest that the LOCATION feature is indeed part of the verb’s semantics. However, there is no further empirical evidence provided to support or refute their claim that the LOCATION feature is truly lost in Stage III, so this point remains unclear.

Stage IV is a part of the cline that not all dialects have reached. Here, we look at sentences from Maltese, because it is one of the dialects with the furthest grammaticalised SIT in the locational trajectory. Camilleri & Sadler propose that the general pattern is that SIT develops from a locative copula with human subjects and only stage-level interpretations (s. §5.4.3) and then expands its uses to a locative copula with inanimate subjects and only stage-level interpretations. Then, the uses are further expanded to a locative copula with either animate or inanimate subjects and the possibility of stage- or individual-level interpretations. Stage IV is defined by SIT being able to combine with non-locative components, and the locative copula exists alongside it. These non-locative copulas are more restricted, however, because they can only have a stage-level interpretation. The examples in (25) show the difference between the locative and non-locative possibilities. The postverbal component is underlined in each.

<sup>31</sup>Even if ‘stay/remain’ are not true copulas, they are still often considered copular verbs in other languages (§5.1). This seems to be a terminological difference, rather than a major consequence for their account.

- (25) *The end of the trajectory: Locative vs. Non-locative postverbals*
- a. Malta {**qiegħd**-a |\*hija} f'nofs il-Baħar  
 Malta.SG.F {**SIT**-SG.F |COP.3SG.F} in\_middle DEF-sea.SG.M  
 Mediterran.  
Mediterranean.SG.M  
 (lit. 'Malta **sits** in the middle of the Mediterranean.')  
 'Malta is in the middle of the Mediterranean.'
- b. L-arblu {\***qiegħad** |hu} qasir.  
 DEF-pole.SG.M {**SIT**.SG.M |COP.3SG.M} short.SG.M  
 (lit. 'The pole **sits**|is short.')  
 'The pole is short.'

[ MALTESE; Camilleri & Sadler 2019, pp. 10–14 ]

In the first sentence (25-a), the subject is inanimate and describes the location of the island country of Malta. This location is not a temporary one: even if it is possible to argue that boundaries can change, the island has not moved in a long time. The other copula option, a pronominal copula, is marked as ungrammatical in this sentence, suggesting that this sort of locative copula is in complementary distribution. In the second sentence (25-b), the subject is again inanimate, although the description concerns an inherent characteristic, that of height. Being inherent to the subject, this is also not a temporary characterisation. However, unlike **SIT** in (25-a), **SIT** in (25-b) is ungrammatical and the pronominal copula is grammatical. Again, this suggests a complementary distribution. Camilleri & Sadler propose that this distribution is very similar to the split-copula systems in Romance (mentioned also in Chapter 5).

Table 6.6 summarises the locative trajectory proposed by Camilleri & Sadler for Arabic *sit*. Like with Table 6.5 in the previous subsection, the stages considered crucial are highlighted in Table 6.6.

TABLE 6.6: Camilleri & Sadlers's locative trajectory for Arabic

Stage	Sense	Subject type	Postverbal category
I.	posture	human	–
II.	'stay/remain'	human	location
III.	'be'LOC	(in-)animate	location
IV.	'be'	(in-)animate	location AP/NP/PP

As above for the UNBOUNDEDNESS trajectory, I will discuss the locative one in terms of the concepts of §6.1.2. Camilleri & Sadler propose that in the transition from Stage I to II, the locative adjunct is reanalysed as an argument, because **SIT** requires a locative complement in Stage II and Stage III. This suggests that the transition can be characterised as recruitment, although if 'stay/remain' are still lexical verbs, then **SIT** is technically not completely recruited in to the functional domain. If, as was pointed out in FN 29 above, 'stay/remain' are analysed as copular verbs and the postverbal location as a predicate, then the transition would definitely be recruitment. Continuing with how Camilleri &



Sadler characterise the trajectory, the transition from Stage II to III is recruitment, as *SIT* is recruited from the lexical domain to the functional domain. Camilleri & Sadler argue that a crucial factor in the change is the presence of a location in the onset context. The transition from Stage III to IV is generalisation: the set of functional meanings expands to include individual-level interpretations for the locative copula; and then non-locative copulas with stage-level interpretations become possible. Like Kuteva, the account presented here, from Camilleri & Sadler, is primarily interested in the structural component, so I end the speculations about the dynamic component here.

The current section presented different accounts of the diachronic trajectory of ‘sit’ and the other core posture verbs in different languages. The next subsection discusses an account of English copular verbs. Insights from all of these accounts are useful for understanding the diachronic trajectory of English *sit*.

### 6.2.3 An account of English copular verbs

In this thesis, I analyse non-literal *sit* as a copular verb (s. Chapter 5), which has developed from the lexical, non-literal use. Based on corpus study data in Chapter 3, I show that English *sit* combines not only with postverbal locatives, but postverbal adjectives; both of which I analyse as the main predicates (s. §5.3–5.4). In the account presented in §6.2.2 concerning Arabic *sit* (Camilleri & Sadler, 2019, 2020), the verb has changed in a similar way, from a lexical verb to a copula. However, there are differences in the diachronic changes: Camilleri & Sadler focus on the importance of the postverbal locative, and analyse it as an argument of a lexical verb. I analyse non-literal *sit* as a copular verb with a postverbal predicate. In the current section, I outline a syntactic account of English copular verbs, van Gelderen (2018), wherein the posture verbs are implicitly included. In §6.3, I present a diachronic corpus study whose results reflect the claims laid out here, that postverbal adjectives are most likely the crucial element of the onset context in the trajectory from literal *sit*, a lexical verb, to non-literal *sit*, a copular verb. Then in Chapter 7, I build on the ideas of the account in this section, expanding it and adapting it for English *sit*’s trajectory.

As was pointed out in §5.1.1, van Gelderen (2015, 2018) includes the core posture verbs in the list of English copular verbs. Based on data and foundational insights from Visser (1963), van Gelderen proposes that in the reanalysis of copular verbs, both the theme argument and the aspect feature of the original item are preserved. A case study included in her monograph is the unaccusative verb *remain*;<sup>32</sup> a verb which is categorised together with the core posture verbs. According to the OED, this word was borrowed from the French in the 1300s, and it originally had the meaning ‘continue to belong, stay with’. This can be seen in the 1388 example in (26), from the OED, with the verb boldfaced.

<sup>32</sup>In the locative trajectory of Arabic *sit*, the verb’s use in an intermediary stage is also translated as ‘remain’; s. §6.2.2.

- (26) To the part of this endenture **remaynand**<sub>old</sub> to the forsaid Alexander.  
 ‘As for the part of this agreement remaining to the already mentioned Alexander.’<sup>[s]</sup>

[ van Gelderen 2018, p.124 ]

In (26), the target item, *remaynand* ‘remaining’, is participle of the intransitive verb. Its meaning in this sentence concerns the continuation of a prior state, i.e., of a state of possession. The possessee is the particular part of an agreement and the possessor is Alexander. An example of the new meaning, when *remain* is a copula, can be seen in (27); this sentence is from 1528.

- (27) the hole body of Christes holy church **remaine**<sub>new</sub> pure.<sup>[s]</sup>

[ van Gelderen 2018, p.124 ]

According to van Gelderen (2018), the sentence in (27) is copular due to the presence of the adjective *pure*.<sup>33</sup> Namely, this adjective is the complement of the copular verb, and not modifying the verb, as an adverbial like *purely* would. In the original meaning seen in (26), *remaine* encodes a continuation of a previous state, identifiable in the context; in the new meaning in (27), however, this state is described by the postverbal adjective *pure*. Both Visser (1963) and van Gelderen (2018) argue that the reanalysis took place in contexts with a postverbal phrase that was interpretable as either a modifier of the verb or as a copular complement. For example, in (28), the underlined word would have been interpretable as an adverbial or as an adjectival predicate. The example in (28) is from 1463, and Visser (1963) argues that adjectives as *unsold* would have been ambiguous. A possible translation of each interpretation is included in (28-a)–(28-b).<sup>34</sup>

- (28) All goodes . . . brought to the seid Fayre . . . **remaynyth** *unsold*<sup>[s]</sup>  
 a. ‘All the goods brought to the aforementioned fair remained<sub>old</sub> unsold.’  
 b. ‘All the goods brought to the aforementioned fair remained<sub>new</sub> unsold.’

In (28), the subject is *all goodes*, which is the theme. It is possible to interpret these goods as having stayed behind, in their unsold state, at the particular fair or as being only in the unsold state, without a specification of where they are located. Because the word *unsold* was interpretable as either an adverbial modifying an intransitive verb or as a complement of the copula, this context is considered structurally ambiguous and therefore amenable to reanalysis (van Gelderen, 2018).<sup>35</sup>

Although the example with *remain* provides good insight to reanalysis, and therefore to recruitment, we do not know to what extent the old, intransitive use of *remain* coexists

<sup>33</sup>There is no further empirical diagnostics given for this claim.

<sup>34</sup>The translations were not provided in van Gelderen’s text, so these are my approximations, KF.

<sup>35</sup>I omit the trees from van Gelderen (2018) in this discussion, because although she also analyses copular verbs with a PredP structure, she assumes copular verbs are generated at Pred. As argued in §5.2, I assume a different structure, wherein the verb takes PredP as its complement.

with the new, copular one, nor is there any indication of the pragmatic motivations, such as inferences becoming conventionalised, behind the change. As discussed in §6.1, reanalysis is merely a static description of stages of a change, and not a dynamic one. Something the account in van Gelderen (2018) also neglects is an explicit enumeration of stages. For one, in the source text, van Gelderen (2018) discusses the adverbial with a lexical verb and adjectival predicate of a copular verb options. That is, it is more likely that transition comprised an intermediate stage where the adverbial was first reinterpreted as a depictive predicate (s. §5.4.1),<sup>36</sup> before the verb was reanalysed as a copular verb. It is also possible that the adverbial interpretation was actually irrelevant, and only the adjectival predicates' status was ambiguous. This motivation for an in-between stage is based on the theory presented in §6.1.3, where Eckardt (2006) explicitly argues for a compositional view of diachronic change. That is, there may only be one unknown item to be reanalysed, not both the verb and postverbal material at the same time. The sentences and the included subscripts exhibit the various possibilities of ambiguous surface structure.

(29) *Ambiguous surface structures*

- a. The goods remained<sub>LEX</sub> unsold<sub>ADV</sub>.
- b. The goods remained<sub>COP</sub> unsold<sub>ADJ</sub>.

The sentences in (29-a)–(29-b) represent the proposal of Visser (1963) and van Gelderen (2018), who argue that the onset context included items ambiguous between adverbials and adjectives. If this is how the change actually happened, it means that language users were confronted with two unknowns in a *remain* sentence: the verb and the postverbal expression. Considering that diachronic changes, on the view I assume here (s. §6.1), require multiple encounters with the target object, a better onset context includes just one unknown, the item to be reanalysed. Therefore, it seems unlikely that *remain* a sentence like (29-a) was reanalysed to have a new argument structure and meaning like the *remain* in (29-b). Another possibility, without such a compositional jump, is illustrated in (30).

(30) *An alternative ambiguity*

- a. The goods remained<sub>LEX</sub> unsold<sub>ADJ</sub>.
- b. The goods remained<sub>COP</sub> unsold<sub>ADJ</sub>.

In the sentences in (30), the only difference is the verb. Namely, in (30-a), *remained* is the main, lexical verb, while in (30-b), the verb has been reanalysed as a copular verb. Although the outcome is the same, i.e., *remain* as a copular verb, the details of the onset context differ between the one in (29), argued for in van Gelderen (2018), and the one in (30), my proposed alternative. Based on the data and statistical analysis of *sit* in historical data in §6.3, my own proposal in Chapter 7 also argues for the importance of postverbal

<sup>36</sup>While there is mention of depictive predicates within the discussion of *remain* (van Gelderen, 2018, p. 126), it only concerns Modern English speakers and their apparent discomfort with adjectives following intransitive verbs.

adjectives in the diachronic trajectory of *sit* from a lexical to a copular verb. However, in contrast to van Gelderen (2018), I explicitly discuss the depictive predicate's role.

### 6.3 Diachronic corpus study of English *sit*

In this section, I investigate the development of English *sit*, using a historical corpus as the empirical base. The research goals for this study are the following: (i) to establish that diachronic change of *sit* has occurred or is underway, therefore demonstrating that the literal and non-literal uses are not simply in static, free variation; and (ii) to characterise the contextual motivation of the change.

Let us address goal (i). First, we know from §6.1.1 that diachronic change can be characterised by an item's (ia) syntactic dependence increasing and its (ib) meaning changing. It was introduced in §2.1 and then analysed in §5.1–5.2 that the non-literal use has more argument structure requirements than the literal one; see also (1) in the introduction to this chapter. The non-literal use is a copular verb, requiring postverbal material, while the literal use is a lexical verb without any postverbal requirements. As we saw in the naturally-occurring data of the synchronic corpus studies in Chapter 3, the postverbal expression is often a location, but postverbal adjectives can appear instead. With the literal use, sometimes a postverbal location is used, but then it is an adjunct, not an obligatory component; sometimes a postverbal adjective, i.e., a depictive predicate, is used as well, also adjunctive in nature. The difference in argument structure between the literal and the non-literal use meets characterisation (ia) of diachronic change.

While there is a core, shared meaning to the literal and non-literal uses of *sit* (see the 'stationary' entailment analysed in §4.2; s.a., (2) above), the literal use's meaning does differ from the non-literal use's meaning. As was shown in Chapter 2, the former necessarily encodes the spatial orientation of the figure, and that figure is typically a human, although it can be any animate subject that is [+butt, +animate]. The non-literal use does not necessarily encode the spatial orientation of the figure, and the figure can be animate or inanimate, as was seen in §4.1. Instead of the figure's spatial orientation in the non-literal use, a property is predicated of the figure, either locative or adjectival (§5.3–5.4). Characterisation (ib), concerning meaning change, is thus also met.

This synchronic snapshot suggests that *sit* has developed from a literal to a non-literal use, although more concrete numbers are needed to enrich the synchronic picture. The diachronic corpus study in this section confirms this suggestion of diachronic change.

We now turn to goal (ii), which concerns what motivates the literal use to become the non-literal use. In the theory presented in §6.1, a key factor is the onset context which could enable the transition. In §6.2.2, we saw work on Arabic 'sit', where Camilleri & Sadler (2019, 2020) speculate that location is a crucial aspect of the context throughout the trajectory. As noted in §6.2.3, van Gelderen (2018) suggests that ambiguous adjectival predicates are important to the transitions of verbs such as *remain*, which are like posture verbs in that they transition into copular verbs. Therefore, in the diachronic corpus

study, the examination of the postverbal material does not centre on locations as it did in the synchronic studies in Chapter 3. That is, the lexical material immediately following the verb is quantified, instead of counting the sentences which contain locations and those without any locations at all. In fact, in the statistical analysis, postverbal adjectives are significant factor.

### 6.3.1 Preliminaries

We begin these preliminaries with a note on labels. In the rest of this section, I will not be using the terms “literal” and “non-literal” as much as in the previous chapters, because the diachronic change originates in contexts with subjects that are able to be in a sitting position. Otherwise, if we were only to look at contexts where a human subject plus literal *sit* was reanalysed into a sentence where an, e.g., inanimate subject, combines with non-literal *sit*, we would overlook important details in the trajectory.<sup>37</sup> For the empirical investigation here, it is therefore more informative to delineate between sitting-able and sitting-unable subjects than to differentiate between the two uses. As such, when discussing the data of this diachronic corpus study, I refer to subject referents who are sentient and who have the appropriate sitting anatomy, as defined in §2.2, as “sittable” and any other subject referents as “nonsittable”.

As described in the introduction to the present section, the main research goal is to determine whether or not non-literal *sit* has increased in use over time, and the secondary one is to determine what in the linguistic context could have contributed to the change. These are phrased as questions in (31).

(31) *Research questions*

**Q1** Does the frequency of nonsittable subjects increase as the years increase?

**Q2** Is there a postverbal category that can predict sittable vs. nonsittable subjects in the diachronic data?

The first question in (31), concerning increasing frequency over time, involves two variables, which I distinguish with small caps throughout this section: the dependent one, FREQUENCY of nonsittable subjects, and the independent one, YEAR. Both variables are scale variables. The null hypothesis of Q1 is that there is no correlation between the two variables, and the alternative hypothesis is that there is a positive correlation; the alternative hypothesis is a directional one.

The second question in (31) is more complex. For one, it presupposes that there is a diachronic change, which means that the first research question must be answered positively before the second one’s examination can be carried out. Furthermore, the dependent variable is no longer the scale variable FREQUENCY of subjects, but rather a categorical one: SUBJECT, which can be either sittable or nonsittable. Finally, in addition to

<sup>37</sup>See a similar argument in the discussion of van Gelderen (2018) in §6.2.3.

YEAR, there is another independent variable, POSTVERBAL, which categorises the postverbal material directly found after *sit* in an observation.

As we saw in §6.1, there are different possible causes for a diachronic change, and based on the speculations made by van Gelderen (2018) about the trajectory of English copular verbs, I looked at the context immediately following the posture verb. From earlier chapters of this thesis, we know that postverbal locations often appear with posture verbs, to the point that they are sometimes categorised as “locative verbs” (§2.3). As was seen in Chapter 3, a postverbal adjective, or rarely a temporal PP, is also possible instead of a location. Beyond these categories, I speculated that there could be adverbials, e.g., *Alex was sitting nervously*, or possibly nothing, e.g., *Alex sat.*, found especially with the sittable subjects, because with these subjects it is possible to highlight the sitting position (s. the account of Maienborn 1990, 1991 discussed in §2.3.2).

Following both van Gelderen’s speculations and the insights from earlier chapters, I hypothesised that the presence of an adjective could be a predictor of the rise of non-literal *sit*, first with sittable subjects and then with nonsittable subjects. These adjectives, although not the most common postverbal category, occur with both uses of *sit*. That is, the surface structure is the same with both uses, an important aspect of recruitment (§6.1.3). In addition, they are contentful predicates, by nature ascribing properties to the participants of an eventuality, which means that the transition from literal use with sittable subjects to non-literal use with sittable subjects is plausibly contextually supported by such a predicate. In §4.1.2, I showed how an appropriate postverbal adjective is actually preferred for the whale-type subject, and hypothesised that the adjective is more useful than, e.g., a location to rescue the potential infelicity of an animate, yet butt-less, animal appearing with *sit*.

For the other possibilities anticipated for POSTVERBAL, I speculated that they are not significant predictors. In the case of adverbials, they are omissible and not semantically entailed (§5.4), and in the case of temporal PP or no postverbal material, it is an uncommon structure for non-literal uses, which means that they are possibly marked structures, but not frequent enough to be a true cause of change. As such, the hypothesis for Q2 is that DEPICTIVE is the category of POSTVERBAL that can best predict SUBJECT,<sup>38</sup> the null hypothesis is that no postverbal category can predict SUBJECT.

### 6.3.2 Materials and methodology

This diachronic corpus study is similar in methodology to the studies in Chapter 3, but there are some differences. For one, the object of investigation includes both literal and non-literal uses of *sit*, not just the latter. This diachronic study additionally differs from the synchronic ones, because there are over five thousand data points, not just a few hundred. Therefore, a more robust inferential statistical analysis is performed and reported in §6.3.3.

<sup>38</sup>Note that in this study, I use DEPICTIVE to refer to the variable representing the postverbal adjective in both uses. This has no bearing on the grammatical status of the postverbal adjective with the non-literal use, i.e., as the main predicate.

The empirical source for present study is the Corpus of Historical American English (COHA, Davies 2010–), in the same dialect and hosted at the same platform as Corpus Study I and Corpus Study II in Chapter 3.<sup>39</sup> At the time of extraction in Spring 2020, this corpus contained 400 million words and the data ranged from the years 1800 to 2000.<sup>40</sup> This study only examined the news and magazine genres. The reason for restricting the genres is twofold: so that the amount of data was manageable, considering that the inclusion of literal *sit* greatly increases the number of observations to analyses, and to ensure the data represented a “generally accepted contemporary standard” (Spalek 2014, p. 48, s.a. Hanks 2004). As can be seen in the summary in Table 6.7, the magazine genre begins earlier than the news genre, and there are more items in the magazine genre as well.

TABLE 6.7: Data source details

COHA	magazine	97 million words	1810s–1990s
COHA	news	40 million words	1870s–1990s

The query for the searches of COHA is in (32), which I completed for each genre separately. As can be seen in (32), I only include the simple past (32-a) and past progressive (32-b), like with the two corpus studies in Chapter 3.

- (32) *Search queries*
- a. `sat`
  - b. `_vb* sitting`

The complete search results were then extracted with the provided extended context. I compiled these in an Excel spreadsheet, and I manually examined each result to filter out blatant misfires, such as the present perfect, nonsensical fragments, and repeated observations. A second round of filtering consisted of omitting irrelevant uses. That is, uses of *sit* which do not occur with either sittable subjects, i.e., possibly encoding posture of the figure, or nonsittable subjects, i.e., encoding location. The irrelevant uses can be divided into four categories: non-verbal uses (33-a), court (33-b), dynamic uses (33-c), and idioms (33-d).

- (33) *Irrelevant uses of SIT omitted in the corpus study*
- a. Gray Eagle’s two sisters are **Sitting Bull**’s wives.
  - b. In the two days that it **sat**, the extraordinary session approved a total of thirteen bills, [. . .]
  - c. They had no clue that within three days, their precious child would be **sitting down to** a meal of roasted bush rat.

<sup>39</sup><https://www.english-corpora.org/>, last accessed 15 August 2021.

<sup>40</sup>An update to the corpus was completed in 2021, where data from the years 2000s–2020s were added and data from the years 1800–1820 were deleted. At my last access in 2021, the corpus contained about 475 thousand words, from 115 thousand texts.

- d. “A lot of good white people who are **sitting on the sidelines** need to get involved.”

[COHA]

Non-verbal name occurrences like in (33-a) were the rarest of the four and the easiest type of irrelevant use to spot. Other examples of this type include *SAT score*, *sitting room*, *Sat(urday) night*. These uses are omitted because this thesis is interested in *sit* as a verb—even if it can be argued that a phrase such as *sitting room* is verbal internally. Court uses, such as in (33-b), are in a judicial context, whether legislative or parliamentary. The verb *sat* in (33-b) means ‘convened’ or ‘met’. These uses are omitted because the sentence does not encode anything about the posture or location of the subject in the court uses; rather, this use is codified with respect to the court context. Dynamic uses, such as in (33-c), are those where the referents of the subject(s) were in motion or the sentence described a result state of that motion. These uses are easy to identify because they comprise a postverbal particle, i.e., *sit down* or *sit up*. As argued in §2.2, this thesis is concerned with stative *sit* only, thus excluding the dynamic uses. The idiomatic uses, exemplified in (33-d), are similar to those court ones in (33-b), in that the meaning is not transparent. The phrase *sitting on the sidelines* does not necessarily mean that the speaker is in a sitting position or that they are located on some sidelines. Rather, it means that the speaker is not completing another contextually-salient action, i.e., they are idle.<sup>41</sup> Further information about my definition of idiomatic phrases can be found in §3.1.2, where it was first presented in the methodology of Corpus Study I.

After the misfires and the irrelevant uses were filtered out, I annotated the remaining sentences in the spreadsheet according to the following protocol. The first round of annotation distinguished between sitable and nonsitable subjects; see definition of necessary anatomy in §2.2. Examples from COHA are in (34)–(35).

(34) *Sitable subjects*

- a. We **sat** on the warm rock and poured cups of rosehips tea [. . .]  
 b. One spring day I was **sitting** out on the stoop reading the paper, and he comes walking up.

[COHA]

(35) *Nonsitable subjects*

- a. A large cup of coffee **sat** on the console and his pet Yorkie, Dandy-lion, stood on his lap [. . .]  
 b. A lot of video game systems are **sitting** on the shelf in the family room [. . .]

[COHA]

<sup>41</sup>Some of these idiomatic phrases might appear to be similar to the non-literal use under investigation: both have the structure of [Theme V Loc]. However, because the subject, or figure, of these are not actually located at the ground, they are different in nature. It is possible that these idiomatic instances—which are not clearly locative—are derived via metaphoric extension in singular instances, in contrast to a productive development like we see with non-literal *sit*.



In both examples of (34), the subject's referent is a person, which is confirmed by the other activities they engage in in the sentence: in (34-a), the subjects poured tea and in (34-b) the subject read the paper. As these examples are not from fantasy or science-fiction novels, these subjects are most likely people, able to be in a sitting position. In contrast, in (35), the subjects are clearly not people, but rather inanimate entities. In both, the subject is not in a sitting position, and the verb is instead being used to describe the location of the subject.

The second round of annotation categorised what immediately follows *sit* in the sentence.<sup>42</sup> First, I categorised the postverbal material in a fine-grained way, in order to preserve as much information as possible. Then, I grouped the categories into six larger ones, which are listed alphabetically in (36).

(36) *Postverbal categories*

- |    |  |           |
|----|--|-----------|
| a. | His stockbroker's black business suit sat <b>strangely</b> on him [...]  | ADVERBIAL |
| b. | [...] the baby carriage sat <b>empty</b> [...]                           | DEPICTIVE |
| c. | Over her right eye sat a <b>blotchy, purple birthmark</b> .              | INVERTED  |
| d. | [...] a chilly look of unconcern sat <b>upon his grim features</b> [...] | LOCATIVE  |
| e. | I'm sitting <b>and</b> the audience is standing.                         | NONE      |
| f. | It sat <b>for a week</b> outside the P.M.'s office [...]                 | TEMPORAL  |
|    |  | [COHA]    |

In the first example (36-a), the adverbial *strangely* immediately follows *sat*. An adverbial is different than a depictive like in (36-b), in that an adverbial modifies the eventuality and its property is not entailed, whereas a depictive describes a property of the participant during the eventuality and that property is entailed (s. §5.4.1). The difference in (non-)entailment of properties can be seen in the sentences of (36): the adverbial of (36-a) describes how the referent of *black business suit* was located on somebody, not how the suit was; in contrast, the depictive of (36-b) ascribes the property of being empty to the baby carriage during the relevant interval.

In this corpus study I consistently apply an AP criteria to the depictive label and categorise any non-adjectival phrases as adverbial. This decision is based on the fact that there is no case marking in English that would enable somebody to clearly judge whether or not a phrase is indeed a depictive. An example of an unclear expression is in (37-a). The adverbial category includes other adverbial items, such as the comitative PP seen in (37-b), which modify the eventuality and do not predicate a property of the participant.

(37) *Other adverbial examples*

- a. Up on the stage, [...] four empty gilt armchairs sat **in lonely grandeur**.

<sup>42</sup>This is different from the annotation in Corpus Study I/II (§3.1.2/§3.2.2), because that annotation was interested in whether there was a locative phrase anywhere in the sentence. The diachronic corpus study described here examines only the lexical material immediately following *sit*. This means that even if a sentence with a nonsittable subject, i.e., non-literal *sit*, is not labelled with "locative", a locative phrase can still be present, thereby not contradicting the previous results.

- b. For 21 minutes, the Pope sat **with his would-be assassin**, Mehmet Ah Agca.

[COHA]

The category of *LOCATIVE* is straightforward: any lexical material that describes the ground with respect to the figure, i.e. the subject. In (36-d) prepositional phrase, *upon his grim features*, describes the location of the figure, *a chilly look*. Sentences in the *INVERTED* category all have inverted sentence order: location, verb, subject; this order is seen in the sentence in (36-c). The sentences where no contentful material followed *sit* were categorised as *NONE*.<sup>43</sup> These included punctuation and conjunctions, such as the *and* in (36-e). Finally, *TEMPORAL* postverbal material describes the point in time or the interval of the eventuality. In (36-f), a prepositional phrase describes the interval for how long a piece of furniture was located outside the respective PM's office. In the next subsection, the results of the diachronic study are presented and analysed.

### 6.3.3 Results and statistical analysis

In this subsection, I describe the results of the annotations and statistical analysis of the results, which I calculated and visualised using R Studio, version 1.4.1717 (RStudio Team, 2021).<sup>44</sup> Tables 6.8 and 6.9 list the overall distribution of use and postverbal category, respectively. These descriptive statistics will be supplemented by more detailed inferential statistics below.

TABLE 6.8: Overall distribution of sitable vs nonsitable subjects in the diachronic corpus study

Category	Frequency	% of total
Sitable	5546	97,0%
Nonsitable	172	3,0%
	<b>5718</b>	<b>100%</b>

The observations of sitable subjects account for the majority of the observations of the dataset. In contrast, nonsitable subjects are observed only three percent of the time.

As can be seen in Table 6.9, *LOCATIVE* is the most common, comprising more than half of the sentences. The next biggest category is *ADVERBIAL*, accounting for a fifth of the sentences. The categories of *DEPICTIVE*, *NONE*, and *INVERTED* involve less than ten percent

<sup>43</sup>Just as there is the possibility of locative phrases following depictives or adverbials, there is the possibility of some sentences labelled *NONE* to have a locative trace from a relativiser like *where*. An example is in (i).

- (i) [...] where a trailer sat. [COHA]

Although strictly speaking these are subsets of *LOCATIVE*, I remain consistent throughout the labelling, and categorise only according to surface structure.

<sup>44</sup>Note that in addition to these reported results, I confirmed that aspect genre did not make a difference in the results, by calculating the odds based on the normed rates of genre (Levshina, 2015) and then later checked regression models with aspect as an effect. Neither aspect nor genre will be discussed further.

TABLE 6.9: Overall distribution of postverbal categories in the diachronic corpus study

Category	Frequency	% of Total
Adverbial	1128	19,7%
Depictive	432	7,6%
Inverted	363	6,4%
Locative	3193	55,8%
None	413	7,2%
Temporal	189	3,3%
	<b>5718</b>	<b>100%</b>

of the sentences, and TEMPORAL is the smallest. Table 6.10 displays the distribution of POSTVERBAL per SUBJECT. Like in the previous two tables, the absolute frequency is listed in the first column, followed by the frequency relative to the use variable overall.

TABLE 6.10: Overall distribution of postverbal category per subject type

Category	Sittable		Nonsittable	
	Frequency	% of Level	Frequency	% of Level
Adverbial	1097	19,8%	31	18,0%
Depictive	396	7,1%	36	20,9%
Inverted	344	6,2%	19	11,0%
Locative	3121	56,3%	72	41,9%
None	402	7,2%	11	6,5%
Temporal	186	3,4%	3	1,7%
	<b>5546</b>	<b>100%</b>	<b>172</b>	<b>100%</b>

For both SITTABLE and NONSITTABLE, LOCATIVE is the most frequent, at around half for each level of SUBJECT. The distribution of other POSTVERBAL levels otherwise varies per SUBJECT: for SITTABLE, the next most frequent is ADVERBIAL with around one-fifth of the observations; followed by DEPICTIVE, NONE, and INVERTED, at around seven percent each; and finally TEMPORAL at three percent. The POSTVERBAL distribution across SITTABLE reflects the overall distribution. In contrast, the second most frequent POSTVERBAL levels of NONSITTABLE are DEPICTIVE and ADVERBIAL, each being about one-fifth of the observations; then INVERTED comprises about a tenth of the observations; finally NONE and TEMPORAL are the least frequent levels, at about six and two percent, respectively.

Although these tables provide information about the dataset, they are not illuminating with respect to the research goals of this corpus study. These are repeated in (38), from (31) above.

(38) *Research questions*

- Q1** Does the frequency of nonsittable subjects increase as the years increase?  
**Q2** Is there a postverbal category that can predict sittable vs. nonsittable subjects in the diachronic data?

In the following, I will first address the research question Q1 of diachronic change. Then, I address research question Q2 of linguistic context.

The hypothesis regarding Q1 is that the frequency of nonsittable subjects does increase over time, which means that the null hypothesis of Q1 is that there is no correlation between frequency and year. Figure 6.2 plots the FREQUENCY per YEAR, with a regression line to show the trend.<sup>45</sup>

FIGURE 6.2: Nonsittable subjects per year

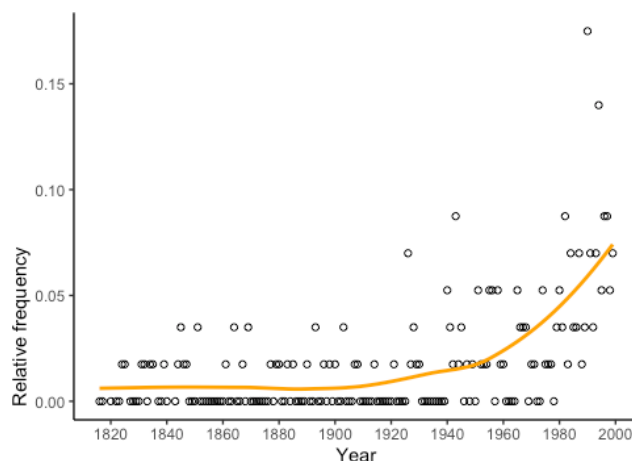


Figure 6.2 shows a positive correlation per YEAR, suggesting the null hypothesis can be rejected. To be sure, however, we need to calculate the strength of the correlation and its significance.<sup>46</sup> There are three correlation coefficients which can be reported: Kendall, Pearson, and Spearman. Here, I report the Kendall correlation coefficient instead of (i) Pearson, because these data do not adhere to normality assumptions; and (ii) Spearman, because many ranks are tied. The Kendall correlation coefficient ranges from  $-1$  to  $1$ , where  $-1$  represents a perfect negative correlation and  $1$  a perfect positive one. A perfect correlation would mean in this case that an increase in YEAR correlates with an increase or decrease in FREQUENCY. A weak correlation is less than  $\pm 0,3$ ; a moderate correlation between  $\pm 0,3$  and  $\pm 0,7$ ; and a strong correlation is greater than  $\pm 0,7$ . The value for the Kendall  $\tau$  coefficient of nonsittable subjects is  $0,37$ , with a p-value of  $< 0,01$ ; indicating that the correlation is positive, moderate, and statistically significant. With this, we can reject the null hypothesis of Q1.

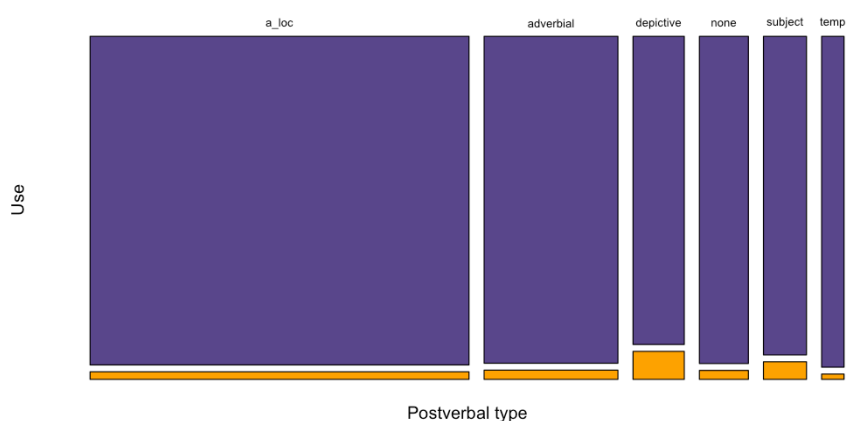
With the diachronic change of nonsittable subjects confirmed, we can turn to the more complex second question. To answer this question, we need a multifactorial function with the following variables: SUBJECT as a function of YEAR and POSTVERBAL category. Both YEAR and POSTVERBAL need to be included, so that we do not incorrectly conclude that only a particular postverbal category is a significant predictor. Additionally, by including YEAR, we can further confirm that the rejection of the null hypothesis of Q1 is correct and significant.

<sup>45</sup>This plot was created with `ggplot2` of the Tidyverse package (Wickham et al., 2019).

<sup>46</sup>The correlation coefficient was calculated with the `stats` package, a base package of RStudio.

To begin, Figure 6.3 displays a mosaic graph of POSTVERBAL relative to SUBJECT; the percentages therefore represent different proportions than those in Table 6.10.<sup>47</sup> Note that “a\_loc” represents locative POSTVERBAL; the other labels are transparent for each category. The coloured part of the columns represents the levels of SUBJECT: purple for SITTABLE and orange for NONSITTABLE. The width of the columns represents the distribution of each level of POSTVERBAL.

FIGURE 6.3: Mosaic graph of POSTVERBAL per SUBJECT



The widths of the columns in Figure 6.3 mirror the values of Table 6.9 above: the locative level of POSTVERBAL is the most frequent in the dataset, followed by the adverbial level. Beyond this information, the mosaic plot indicates that the NONSITTABLE level of SUBJECT appeared most often with the DEPICTIVE and INVERTED categories. This suggests already that these categories could be significant predictors for SUBJECT.

To evaluate the hypothesis, I used logistic regression `lrm` from the `rms` package Harrel Jr 2021.<sup>48</sup> As noted above, the predictors measured were YEAR and POSTVERBAL, with SUBJECT as the response variable. YEAR is a scale variable with 200 levels, POSTVERBAL is a nominal variable with six levels, and SUBJECT is a nominal variable with two levels. The baseline levels of the two nominal variables is SITTABLE for SUBJECT and LOCATION for POSTVERBAL, i.e., the left most square of the mosaic graph in Figure 6.3.

Before proceeding with the model calculation, we need to look more closely at the baseline values, in order to determine whether or not there is a “class imbalance”; where “class” refers to the levels of the variable. This is important because such an imbalance can drastically affect any model’s predictive power (Kuhn & Johnson, 2013; Menardi &

<sup>47</sup>The mosaic plot was created with the `mosaicplot` function of the `graphics` package, a base package included in RStudio.

<sup>48</sup>As corpus data is notorious for its limitations with respect to statistical analysis (Gries, 2015; Brezina, 2018, a.m.o.), mixed effects models are ideal, and I checked whether such an approach is appropriate here. The two typical contenders for random effects in such a study are text/source and genre. However, because this interface of COHA does not label individual texts and because the two genres included here are very similar, including random effects was not helpful for the analysis.

Torelli, 2014). Looking at the mosaic graph in Figure 6.3, we can already see that this might be the case, as the orange rectangles representing NONSITTABLE are much smaller than the purple ones for SITTABLE. To be more precise, we can look at the proportion of each level. In Table 6.8, repeated here as Table 6.11, we can see that there is indeed a severe class imbalance: the level of SITTABLE accounts for 97% of the observations.

TABLE 6.11: Overall distribution of sittable vs nonsittable subjects in the diachronic corpus study

Category	Frequency	% of Total
Sittable	5546	97,0%
Nonsittable	172	3,0%
	<b>5718</b>	<b>100%</b>

The strategy I used for overcoming such an imbalance is subsampling the data, implemented with the *caret* (Kuhn, 2021), *ROSE* (Lunardon et al., 2014), and *DMwR* packages (Torgo, 2010). I first report how I processed the data and evaluated the models, then I will report the results of the best model.

Following Kuhn & Johnson (2013) and the documentation of *caret* (Kuhn, 2021), the original dataset was split into “test”, to test the predictions of the subsample models, and “train”, to train the subsample models; the training subset contained 80% of the data points. Hybrid subsampling methods were used on the training subset; these and the methods on which they are based are listed in (39).

(39) *Subsampling methods to overcome severe class imbalances*

- a. **up-sample**: randomly sample the minority class, adding these values to the minority class so that the size of the minority class resembles that of the majority class
- b. **down-sample**: randomly subset the majority class, so that the size of the majority class resembles that of the minority class
- c. hybrid techniques: down-sample the majority class and up-sample the minority class
  - (i) **ROSE**: Random oversampling examples
  - (ii) **SMOTE**: Synthetic minority oversampling technique

After running the calculations in R, each training subset was fitted to a logistic regression model using *lrm* from the *rms* package (Harrel Jr, 2021). Then, the goodness of fit for each model was compared, using the concordance index “C”. This value is a measure of performance that uses the proportion of positive data points that are correctly considered as positive and the proportion of negative data points that are mistakenly considered as positive. It can be between 0,5 and 1,0, where 1,0 is the best possible value and above 0,8 are considered good values (Levshina, 2015, p. 259).

Finally, these models were each tested for overfitting, which I calculated with the *validate* function from *rms* package (Harrel Jr, 2021), refitting the model 200 times. Whether or

not a model is overfitted can be determined by the optimism value of the slope, which tells us by how much the estimates of the regression coefficients of the predictor variables are too optimistic. If this value exceeds 0,05, the model is considered to be overfitted (Levshina, 2015, p.167). Table 6.12 reports the C index and the optimism value for the two hybrid models, plus the original dataset for comparison.

TABLE 6.12: Comparing model fit across sub-sampling strategies

Model	C index	Optimism
ROSE	0,657	0,0198
SMOTE	0,668	0,0507
original	0,676	0,1101

According to the values in Table 6.12, the subsampling method with the best C-index is SMOTE, and it is barely over the threshold for overfitting. ROSE has a slightly lower C index, and it is also under the threshold of overfitting. The final row, reporting the values for the original data, contains a C index in-between the hybrid models, but it has the worst optimism slope value. Out of the three models of Table 6.12, SMOTE has the best overall values, so I report the regression results for its model only. These results of logistic regression can be found in Table 6.13, with a final column for the simple odds calculated from the log odds (the coefficient).<sup>49</sup>

TABLE 6.13: Logistic regression: SMOTE-sampling model

	Coef	S.E.	Wald Z	Pr(> Z )		Odds
Intercept	-17,2104	3,1941	-5,39	<0,0001	***	0,00
year	0,0085	0,0016	5,19	<0,0001	***	1,01
postverbal=adverbial	0,5526	0,1772	3,12	0,0018	**	1,74
postverbal=depictive	1,4609	0,2141	6,82	<0,0001	***	4,31
postverbal=inverted	0,9743	0,2463	3,96	<0,0001	***	2,65
postverbal=none	0,2602	0,2751	0,95	0,3442		1,297189
postverbal=temp	0,5508	0,4503	1,22	0,2212		1,73464

In Table 6.13, there are four highly significant predictors: YEAR and the POSTVERBAL categories of DEPICTIVE, INVERTED, and LOCATIVE (the intercept). Finally, ADVERBIAL is slightly significant, and NONE/TEMPORAL are not significant whatsoever. The only negative coefficient is the intercept, which represents LOCATIVE. This negative coefficient in logistic regression means that the effect of LOCATIVE is in favour of SITTABLE. In contrast, the other coefficients are all positive, meaning that all the other predictor variables and their levels are in favour of NONSITTABLE. The final column presents the simple odds ratio of each of the significant predictors, in order to better see the effect size; these are calculated from the coefficient values, which are log odds. The rows for DEPICTIVE and INVERTED have the highest odds and are highlighted in grey, because they are also highly significant. These

<sup>49</sup>I also checked for an interaction between YEAR and POSTVERBAL, using `anova` to compare. There is no significant difference between a regression model with interaction and the one presented here.

two are followed by ADVERBIAL, which is less significant. Then there is YEAR which does not display high odds, but as this is at the reference level, i.e., the beginning of the interval, these odds would increase each subsequent year.<sup>50</sup> The intercept has a very low odds value.

Table 6.14 displays the distribution of each category per subject type with their effect sizes, as a summary to end this section. This information is from Tables 6.10 and 6.13 above. The two highlighted postverbal-levels have the biggest effect size and are the most significant.

TABLE 6.14: Overall distribution of postverbal category per subject type, with rounded effect size (odds ratio)

Category	Sittable subjects			Nonsittable subjects		
	n	% of Level	Odds	n	% of Level	Odds
Adverbial	1097	19,8%		31	18,0%	1,74**
Depictive	396	7,1%		36	20,9%	4,31***
Inverted	344	6,2%		19	11,0%	2,65***
Locative	3121	56,3%	0,00***	72	41,9%	
None	402	7,2%		11	6,5%	1,30
Temporal	186	3,4%		3	1,7%	1,73
	<b>5546</b>	<b>100%</b>		<b>172</b>	<b>100%</b>	

Although the locative category is more frequent for both types of use, its effect size is quite small. The adverbial category is also relatively frequent, the second largest for sittable subjects and third largest for nonsittable subjects, and it has a higher odds ratio than locative. However, the odds of the adverbial category are not high at all, considering 1 is “no effect size”. Instead, it is the depictive and inverted type of postverbal category which are better predictors of nonsittable subjects. They are not the most frequent categories for nonsittable subjects, but their effect sizes are 4,31 and 2,65, respectively.

### 6.3.4 Discussion

The diachronic corpus study presented in this section has two main components, mirrored by the two research questions posed. These questions are listed in Table 6.15, with the answers provided by the results and statistical analysis.

TABLE 6.15: Research questions, answered

<b>Q1</b>	positive correlation of YEAR and FREQUENCY of nonsittable subjects
<b>Q2</b>	DEPICTIVE is the most significant predictor of SUBJECT, followed by INVERTED

<sup>50</sup>For example, to see what the odds are for a sentence with a depictive immediately following *sit* in the year 1970, one would multiple the log odds of YEAR by 160 (because the first year is 1810) and add the log odds of DEPICTIVE, so that the log odds ratio can be calculated. Then, the log odds ratio would be transformed into simple odds ratio, resulting in 0,948, or a 95% chance of nonsittable subjects in that context.



As can be seen in Table 6.15, the null hypothesis of each question can be rejected: for Q1, there is a correlation between YEAR and FREQUENCY, and for Q2, some levels of the predictor POSTVERBAL are significant predictors.

The first question is interested in establishing that *sit* with nonsittable subjects has increased in frequency over the previous two centuries, and the data shows that this is indeed the case. Considering the low frequency of *sit* with nonsittable subjects overall (3%), it is possible to say that we are witnessing a change-in-progress.<sup>51</sup> This is unlike other languages that we have seen in §6.2, where the posture verb is already the default for inanimate, i.e., nonsittable, subjects. Other diachronic work on posture verbs notwithstanding, the change-in-progress status of English *sit* is consistent with what is expected for the copular verb it has been developing into (s. §5.1–5.2).

The second question investigates the immediate linguistic context, in order to see whether that has an effect on the combination of *sit* with sittable vs. nonsittable subjects. It was found that sentences with depictive predicates are the most significant predictors of *sit* with nonsittable subjects. This contrasts speculations by Camilleri & Sadler (2019, 2020), who tentatively proposed, based on Arabic data, that location plays a bigger role in the change (s. §6.2.2). In syntactic work on copular verbs discussed in §6.2.3, van Gelderen (2018) hypothesises that postverbal adjectives are important for the reanalysis from lexical verb to copular verb. This diachronic study provides data in partial confirmation of this hypothesis. What needs to be determined next is why depictive predicates are so significant. Considering the claims presented in §5.4.2, that depictive predicates are associated with focus, it is possible that information structure plays a role in the diachronic change. This and its theoretical implications will be explored more in the next chapter, in particular for depictive predicates.

Before moving on to the proposal, we will discuss the study design and its possible consequences for the results. Analysing data from a historical corpus enables us to take a bottom-up approach to examining the diachronic change of *sit*. Also, as a part of building theories based on real data, unanticipated components of the construction are discoverable in the naturally-occurring data. In the diachronic corpus study presented here, for example, it was not expected that inverted sentence structure, e.g., *there sat a monstera plant*, would have such a large effect as a predictor of nonsittable subjects.

There are, however, a few well-known difficulties to working with corpora, historic and otherwise, in particular using statistical analysis on that data. First, there is the question of “diachronic representativeness” (Brezina, 2018, p. 221), which regards whether or not a corpus or subcorpora can be an adequate sample of a language community. Typically the texts of a corpus are not exhaustive with respect to the output of language users. Here, I chose to focus on the news and magazine genres following previous work on the semantics of non-literal verbs (Spalek, 2014, 2015). These genres are more formal than spoken data or a blog-style text, and these texts are presumably copy-edited. On the platform I used, there are spoken- and blog-genre corpora available, but: (i) spoken

<sup>51</sup>Although recent work in vector semantics shows that changing frequency does not always accompany a semantic shift (Turney & Pantel, 2010; Baroni et al., 2014; Kutuzov et al., 2018).

data before 1990 are only from the British National Corpus and I wanted the data's dialect to remain consistent with the previous two studies; (ii) the historical nature of the study precluded web-based texts. In addition, these news and magazine texts are from various publications, which means there should not be some overarching editing guideline influencing the writing style. Nonetheless, as is noted in §7.1.2, it would be interesting to know whether the onset context data are affected by the genre choice: a future study could follow up with less formal genres in the 1800s and earlier, to better corroborate my proposed account in §7.1.

In some corpus studies, the authors are able to use a mixed effects analysis to account for random effects (Gries, 2015; Speelman et al., 2018, a.o). However, as noted in the previous section, this was not possible in the analysis. More independent variables than the two here, i.e., YEAR and POSTVERBAL, would possibly require a mixed effects model. Of course, there is the general weakness of this and my other corpus studies: I was the sole annotator, so no comparison of labelling was possible. Ideally, future studies would include multiple annotators.

In addition to the above, the choice of annotation in this study could have affected the results. For example, with the POSTVERBAL predictor, there are alternative labelling possibilities: (i) one can quantify whether there is a location at all; (ii) one can categorise the linguistic context more exhaustively and therefore fine-grained, by labelling each item in the context; (iii) one can use a more fine-grained labelling system, by breaking down a category like ADVERBIAL into MANNER, COMITATIVE, etc. I made the final decisions concerning these predictors based on what I considered to be at the intersection of most informative and most efficient for labelling. Concerning (i), we already know from the previous corpus studies that a locative argument is required for nonsittable subjects, but that sometimes depictive predicates appear as well or instead. Concerning (ii), the nature of the data leads to the consequence that each observed sentence is of a different length, not as in a controlled experiment with minimal pairs. As such, an exhaustive labelling of the surrounding context would most likely produce noisy data rather than informative data. In addition the two most significant predictors of this study are less likely than a plain locative phrase to have intervening material, which further suggests this would not be advantageous. Concerning (iii), the category that is most likely to be subcategorised is ADVERBIAL. However, as we already know from §5.4.1, depictives and adverbials are theoretically different. In this way, subcategorising the adverbial category does not seem to be more informative.

For the other predictor, YEAR, I could also have looked further into the past. However, COHA only provides data from the last two centuries. In the preparation of the corpus study, I did look at texts from an earlier corpus from the same platform, Early English Books Online. However, understanding the sense of the sentences is difficult for somebody not trained in Old or Middle English. While the low frequency of *sit* nonsittable subjects that was found in this diachronic study further suggests that omitting earlier time interval did not affect the study negatively, it would have been interesting to learn more about the onset contexts.

## 6.4 Summary

This chapter has presented the foundation for proposing an account of *sit*'s trajectory in English, which I do in the next chapter. In the first section, §6.1, terminological assumptions were laid out, current semantic theory on diachronic change was described, and a case study was reported. The key takeaways from the first section are that theories of semantic change should not just describe the static stages of a diachronic change, but additionally analyse the pragmatic strategies of a community's language users (Eckardt, 2006; Deo, 2014, 2015a). In addition, in the recruitment transition, which I claim in the next chapter is relevant for *sit*, inferences play a crucial role in the diachronic change. In §7.1, I argue that the 'idle' inference is the relevant one for *sit*'s change.

In the second section, §6.2, three different accounts were discussed. The first is from Kuteva (1999, 2001), and it is often cited in the literature on posture verbs. Kuteva proposes that in many languages, posture verbs develop into aspectual markers. The second study concerns Arabic dialects' 'sit', accounted for by Camilleri & Sadler (2019, 2020), who argue that the posture verb has developed into both an aspectual marker in one trajectory and a locative copula in another trajectory; both these trajectories are observed in many of the dialects investigated. Both accounts, especially the latter, emphasise the important of locatives in the change. In contrast, in an account of the diachronic development of English copular verbs (van Gelderen, 2018), it is argued that postverbal modifiers, ambiguous between an adjectival and adverbial function, are the crucial items in the linguistic context. I argue in this section that while English *sit* has become a copular verb, similar to what is claimed for Arabic, the function of English *sit* is not limited to locatives. I additionally point out that while van Gelderen's insights about postverbal adjectives are important, it seems that an intermediary stage has been overlooked.

In order to gain a clearer idea of *sit*'s behaviour that does not only rely on the literature, I undertook a diachronic corpus study, examining *sit*'s use over the last two hundred years. In that corpus study, I quantified the frequency of observations for both subject referents able to be in a sitting position and those unable to do so; this distinction reflects theory in §6.1 that the old and new forms of a target item often co-exist throughout the timeline of a change. I then annotated the postverbal context for each sentence (§6.3.1–6.3.2). The results of the corpus study suggest that (i) that a postverbal adjective is an integral part of the change, confirming the claim of van Gelderen (2018), and (ii) that the change from literal to non-literal *sit* is a change in progress (§6.3.3–6.3.4). Both of these points are addressed in the next chapter. More specifically, (i) is addressed in §7.2, where I examine the adjectives of the dataset more closely and then account for why this variable is the one crucial to the change. Then, (ii) is described in §7.3, where I connect the diachronic data with the synchronic picture.



## Chapter 7

# The transition from literal to non-literal *sit*

In the previous chapter, I reviewed diachronic background theory and accounts relevant to English *sit*. In particular, I discussed cross-linguistic accounts of posture verbs and an account of English copular verbs, pointing out where these accounts are compatible with the synchronic data of *sit*. Following that discussion, I undertook a diachronic corpus study of *sit*, in order to learn about English *sit*'s patterns in the last two hundred years. Building on the insights of the previous chapter, I propose an account of *sit*'s diachronic trajectory in the present chapter. The proposal builds upon empirical evidence from the diachronic corpus study, my account of English *sit* does not rely on reconstruction of the phenomenon, but instead it is a bottom-up, data-driven examination. In addition, the diachronic proposal in this thesis does not look at only the structural component, but the dynamic one as well. Drawing on insights from theory in §6.1.2 and from the case study of *be going to* (Eckardt, 2006), presented in §6.1.3, I analyse not only what the individual stages look like, but also how they changed.

As claimed in §5.1–5.2, non-literal *sit* is a copular verb and literal *sit* a lexical verb. The cline that I will argue for in this chapter is schematised in (1), with the subject type on the first line and the presence vs lack of encoding sitting-position on the second line.<sup>1</sup>

- (1) I. sittable subject > II. sittable subject > III. nonsittable subject  
       ‘sitting position’    ¬‘sitting position’    ¬‘sitting position’

The transitions between the three stages of this cline are accounted for in this chapter. Namely, I account for the onset context from stage I, when sittable subject referents are interpreted as being in a sitting position, from stage I to stage II, when sittable subject referents are not interpreted to be in a sitting position. In both stages, *sit* is still a lexical verb. From specific contexts where *sit* was not interpreted literally, its use expanded to more general ones; the next transition to stage III, with nonsittable subject referents, concerns this expansion, and it is when reanalysis of the underlying structure occurs.

<sup>1</sup>In §6.3, I used the label “sittable” subjects to describe any subject referent who met the requirements for combination with literal *sit*, and “nonsittable” for those who did not. This change in nomenclature is important for describing a diachronic trajectory, as the binary “literal” and “non-literal” labels are too opaque for the diachronic trajectory. That is, for *sit*, it is important to consider uses with sittable subjects who are not necessarily described to be in a sitting position.

The evidence for the cline in (1) includes increased syntactic dependency, as the non-literal, copular, *sit* in stage III requires a postverbal component, a location or an adjective; this was introduced in §2.1. On top of the increased syntactic dependency, the meaning has changed from literal to non-literal *sit*: non-literal *sit* no longer encodes a sitting position of the subject referent; see §2.2 for a definition of the posture position encoded by literal *sit*. This change of meaning occurs in the transition from stage I to II of (1).

The corpus study reported in §6.3 confirms the increased frequency of *sit* in combination with nonsittable subjects over the last two centuries, demonstrating that more and more speakers are using the new meaning. The change from a lexical verb to a functional verb motivates my claim that the transition type of *sit* is recruitment (s. theory in §6.1), and my analysis of *sit*'s trajectory is inspired by the analysis of *be going to* by Eckardt (2006), presented in §6.1.3. However, my own account proposes further pragmatic details about the motivation of each stage than Eckardt's.

The main research goals of the present chapter are threefold. Namely, the goals are to (i) identify the onset context, including the relevant inference, for the change from stage I to II in (1); to (ii) identify which surface structure is ambiguous and thereby enables reanalysis, i.e., the transition from a lexical verb to a copular verb in (1); and to (iii) place the synchronic account, the content of Chapters 2–5, on the diachronic trajectory.

Research goal (i) is addressed in §7.1. A crucial component of the first change is an inference sometimes associated with the original use of *sit* in certain contexts (s. theory and case study in §6.1.2–6.1.3). I claim that this inference centres on idleness, and it first arises with sittable subject referents in combination with an extended temporal interval; often in these cases, the postverbal adjective *idle*, or its synonyms, appears. Importantly, the posture of the subject referent is not necessarily entailed in these idle uses. This inference eventually becomes conventionally associated with a new, non-posture-encoding use of *sit*, and then generalised to other linguistic contexts. After the generalisation of the inference, the surface structure of the new and old meanings are ambiguous, enabling reanalysis.

Research goal (ii) is addressed in §7.2, where I argue that there are linguistic contexts with postverbal adjectives that do not specifically encode posture, and that it is these contexts are most likely the ones which enable reanalysis. This claim is based on the results of the corpus study in §6.3, the observation in §5.4 that, synchronically, non-literal *sit* combines with the same type of postverbal adjective as literal *sit*, and the claims in previous literature, reviewed in §5.4.2, that depictive predicates are consistently in the focus domain of a sentence. The identification of postverbal adjectives as the key component confirms an observation by van Gelderen (2018) for English copular verbs (s. §6.2.3), although I deviate from her account, in identifying the ambiguity in the verb-adjective combination, not in an adjective vs. adverbial interpretation of a postverbal modifier. In addition, the postverbal adjective's role that I propose in this thesis refutes claims in the literature that posture verbs are primarily locative verbs (s. §2.3), and that the locus of change for posture verbs is postverbal locations (§6.2.1–6.2.2). While I acknowledge the

possibility that postverbal locations could also be part of the ambiguous reanalysis context, an important contribution of this thesis is that I demonstrate a new perspective on the traditional view of posture verbs as locative verbs, including the diachronic analyses. In order to support my arguments, I first perform a posthoc analysis of the adjectives in the diachronic corpus study's dataset in §7.2.1.

In §7.2.2, I account for how postverbal adjectives could be so important in the trajectory. I argue that depictive predicates in combination with sittable subjects have effects on the information structure: depictive predicates, having a high focus affinity (s. §5.4.1), highlight new information and can introduce alternatives; this behaviour enables non-posture-encoding interpretations of the sittable subjects. Eventually, the combination of sittable subject, *sit*, and postverbal adjective is reanalysed from lexical verb plus depictive predicate, to copular verb plus adjectival predicate. In both cases a property is predicated of the subject, but only in the latter case the predicate is the main predicate of the clause. Research goal (iii) is addressed in §7.3. The final part of *sit*'s trajectory, which is currently in progress, is the actualisation of the new, reanalysed form. This form is what I call in this thesis “non-literal *sit*”: a copular verb which combines with any type of subject referent and which does not encode posture. Instead, the postverbal predicate ascribes a property to the subject, most often locative or adjectival. Finally, in §7.4, my proposal of English *sit* is discussed, comparing it to the cross-linguistic accounts presented in §6.2, and extending it to the other two core posture verbs in English, *stand* and *lie*.

## 7.1 The onset of the transition: Idle humans

The main research goals of this section are the following: (i) motivate a classification of the transition type of *sit*; (ii) identify the onset context, including the relevant inference, for the change from sittable subjects in sitting positions to sittable subjects not in sitting positions; (iii) identify which surface structure is ambiguous and thereby enables reanalysis. The goals of this section concern not only a description of the stages of the trajectory, i.e., the structural component of *sit*'s change, but also a part of my proposal for the pragmatic strategies behind the change, i.e., the dynamic component of the change. The content of §7.1.1 addresses research goal (i). In §6.1.2, I provided an overview of possible transition types in a diachronic change: recruitment, categorialisation, and generalisation (Deo, 2014, 2015a). The first concerns a lexical item developing into a more functional use and the second two concern functional items which become the default and expand their uses. Sometimes a trajectory exhibits only one type of transition, and sometimes there are multiple stages with multiple types. In §7.1.1, I claim that the transition from the literal to the non-literal use of *sit* is of the recruitment type only, as the verb transitions from the lexical to the functional domain. That is, the literal use of *sit*, a lexical verb, has been reanalysed as the non-literal use of *sit*, a copular verb, as was schematised in (1) in the introduction to this chapter. This transition of lexical verb to copular verb is not unique, and I provide cross-linguistic examples in the discussion.

Regarding goal (ii), I argue in §7.1.2 that the relevant onset context contains idle humans; that is, the onset context contains humans who can be in sitting positions, but also temporal intervals which are too long for a person to normally maintain a sitting position.<sup>2</sup> These type of sentences were introduced in §2.1.1 and discussed in §4.2. A sentence exemplifying “idle humans” is in (2).

(2) Nicole sat in Bruttig for weeks.

In such sentences as (2), there is a temporal interval with a long duration, and the subject referent is not necessarily interpreted to be in a sitting position for the entire interval. Instead, the sentence is accompanied by the ‘idle’ inference. For (2), the interpretation is that Nicole was located in the village of Bruttig for many weeks, that she did not leave the village, but that she was not in a sitting position the entire time. In addition, there is an inference that while she was staying in Bruttig for so long, there she was not productive or active. For example, it is understood that she was not, say, remotely working, but rather that she was most likely doing nothing.

After the specific combination of sitable subjects and extended temporal intervals are used often enough that the ‘idle’ inference is consistently present for non-posture-encoding *sit*, it can be said that *sit* is associated with a new meaning. However, remember at this point that the subject referent still has the anatomy to be in a sitting position, so omitting the postverbal component in (2) is grammatical, although it changes the meaning. In other words, the new meaning of *sit* has not yet developed into a copular verb, and structural reanalysis has not yet happened in the language community. In §7.1.2, I begin to address research goal (iii), which concerns the specific linguistic context for reanalysis, and this investigation continues in §7.2. Essentially, I propose that postverbal adjectives are important factors in that diachronic trajectory, building on insights from van Gelderen (2018), discussed in §6.2.3. My account furthermore shows that *sit*’s trajectory in English does not centre on locatives, unlike what has been claimed in other languages (s. accounts discussed in §6.2.1–6.2.2).

### 7.1.1 The transition type of *sit*

In this subsection, I argue that the diachronic change from literal to non-literal *sit* can be categorised as recruitment (Deo 2014, 2015a; s.a. §6.1.2), and I propose the stages of *sit*’s trajectory, appealing to theory presented in §6.1.3. The definition of recruitment and the other possible transitions are in Table 7.1, repeated from Table 6.1 in §6.1.2.

<sup>2</sup>Although it is possible to conceive of sentences with idle non-human animals, these are much less common. This relative rarity is possibly due to the conceptual limits of personifying animals, particularly with respect to idleness and productivity.



TABLE 7.1: Transitions in diachronic semantics (Deo, 2014, 2015a)

Type	Domain	Characterisation
RECRUITMENT	lexical > functional	lexical <i>Y</i> innovated to create a functional semantic contrast: <i>Y</i> with previously-existing <i>X</i>
CATEGORIALISATION	functional	<i>Y</i> becomes obligatory in certain contexts for functional semantic contrast with <i>X</i>
GENERALISATION	functional	meaning of <i>Y</i> broadens to encompass <i>X</i> ; functional semantic contrast gone

Of the three transitions defined in Table 7.1, recruitment is the only one where the transition is from the lexical to the functional domain. This distinction already rules out categorialisation or generalisation for the transition of literal *sit* to non-literal *sit*, because those two transition types occur within the functional domain. As is defined in Table 7.1, recruitment happens when an innovative lexical form *Y* arises, creating a functional semantic contrast with the previously-existing form *X*. For the present study, the form *Y* is the non-literal use of *sit*, a copular verb innovated from the literal use, a lexical verb. The form *Y* semantically contrasts with an existent form, *X*, which is the copula *be*. In what follows, I first describe the semantic contrasts of copular *sit* and the copula *be*, then I apply the theory from §6.1.3 to *sit*.

As is described immediately above, the non-literal use of *sit*, a copular verb, is semantically contrastive with *be*. For example, non-literal *sit* contributes information that the subject referent is overall not moving, introduced in §2.3.3 and characterised in §4.2 as the ‘stationary’ entailment.<sup>3</sup> This inference is not contributed by English *be*, as is illustrated with same-speaker cancellations in (3)–(4), where the sentences with *be* allow movement within the ground referent, i.e., the backyard.<sup>4</sup>

- (3) *The ‘stationary’ inference and sit*
- a. Jörg is **sitting** in the backyard. #He is running after the dog.
  - b. The clothes **are sitting** in the backyard. #The wind is blowing them around.
- (4) *The ‘stationary’ inference and be*
- a. Jörg **is** in the backyard. He is running after the dog.
  - b. The clothes **are** in the backyard. The wind is blowing them around.

The same-speaker cancellation of the ‘stationary’ entailment is infelicitous with the *sit* sentences in (3), which is unsurprising considering that it is an entailment of both uses. In contrast, the cancellation of this inference is felicitous for the *be* sentences in (4). For both sentences, it is plausible to ask the whereabouts of Jörg or the clothes, and respond

<sup>3</sup>On top of the ‘stationary’ entailment, another inference is present, the ‘idle’ inference. This inference is shown to be consistently present with non-literal *sit*, as discussed in Chapter 4. In the next subsection, I return to this inference and its relevance to the diachronic trajectory of *sit*.

<sup>4</sup>Note that sentences with literal and non-literal *sit*, or sitable and non-sitable subject referents, are used, so that a minimal pair with animate subjects and *be* is possible. Even though the present discussion concerns the contrast of non-literal *sit* with *be*, this inference is found with both uses of *sit*; s. §2.3.3 and §4.2.

with the *be* sentences in (4), plus the second sentences containing additional information about the subject referents. As long as the subject referents are both within the surface area of the ground, thereby not contradicting the first *be* sentence, the continuations are felicitous. This data in (3)–(4) suggests that *sit* contributes additional information, i.e., the ‘stationary’ entailment, that *be* inherently lacks.

Another contrast with *be* is that only certain types of adjectives are compatible with *sit*, as was discussed in §5.4: those that pattern like stage-level predicates. In contrast, English *be* can compose with either a stage-level-like or an individual-level-like predicate. This difference is shown in (5)–(6).

- (5) *Individual-level predicates and non-literal sit*
- a. #The kids **sat** {intelligent|Italian}.
  - b. #*The Neapolitan Novels sat* {intelligent|Italian}.
- (6) *Individual-level predicates and be*
- a. The kids **are** {intelligent|Italian}
  - b. *The Neapolitan Novels are* {intelligent|Italian}.

In (5), both uses of *sit* are shown to be infelicitous with adjectives known to have individual-level interpretations. In contrast, *be* is compatible with these adjectives, regardless of the animacy of the subject. A similar contrast is seen in languages with more than one *be*-like verb (see §5.1.1).

Interestingly, posture verbs are known to be the source of some copulas cross-linguistically, and the semantic contrast in these diachronic changes can be described roughly with respect to the stage-level/individual-level tendencies.<sup>5</sup> We saw in §6.2.2 how ‘sit’ has become a copula in Arabic, and that Camilleri & Sadler (2019, 2020) account for the copular patterns in the final stages in terms of stage-level vs. individual level properties. Other examples include Irish/Scots Gaelic *ta/tha*, which is said to have derived from the Proto-Indo-European root *\*sta-*, and which is related to *stand* (see Devitt 1990 for a general discussion of copulas’ lexical sources; s.a., e.g., Doherty 1996 and Adger & Ramchand 2003 on Gaelic copulas). Another example can be found in the Spanish diachronic literature, where authors have argued that *estar*’s predecessor *stare* denoted a standing position, and that beginning in Late Latin, this new form began to diachronically compete with the older form *ser* (Batllori & Roca, 2012; Sánchez-Alonso, 2018). Currently, *estar* is the default copula in certain contexts, i.e., stage-level-like interpretations, and is slowly expanding its uses into the individual-level-like interpretations hitherto reserved for *ser* (Fernández Leborans, 1999; Arche, 2006; Gumiel-Molina et al., 2015; Arche et al., 2017; Pérez-Jiménez et al., 2018). Spanish versions of the English sentences in (5)–(6) are in (7).

<sup>5</sup>See §5.4.3 for a description of these terms, and §5.4.4–5.4.5 for an alternative account (Gumiel-Molina et al., 2015, 2016). Although I account for *sit*’s compatible adjectives with this alternative account, I use the stage-level/individual-level nomenclature in present chapter, as this is most common in the literature and it is not crucial to the discussion.

(7) *Adjectival patterns and Spanish copulas*

- a. Los críos {son| #están} {inteligentes| italianos}.  
 the kids SER ESTAR intelligent italian  
 ‘The kids are {intelligent|Italian}.’
- b. Los libros de la saga *Las Amigas* {son| #están} {inteligentes| italianos}.  
 the books of the saga the friends SER ESTAR intelligent italian  
 ‘The books in *The Neapolitan Novels* series are {intelligent|Italian}.’

[ SPANISH ]

In (7), the Spanish copula *ser* is compatible with the two individual-level-like adjectives, similar to English *be* in (6). The copula *estar*, however, is infelicitous, similar to English *sit* in (5). Although *sit* has not developed to the same degree as *estar*, it is interesting to observe the cross-linguistic parallels, not only in source of the morphological form, but in the semantic contrasts which persist.

In addition to these semantic contrasts, van Gelderen (2018) has speculated that in some developments of lexical verbs into copular verbs, ambiguous postverbal expressions have played a role. This account was presented in §6.2.3. According to van Gelderen (2018), postverbal adjectives can be ambiguous between an adverbial and an adjectival interpretation. However, this proposal does not fully reflect either the synchronic variation of *sit* nor the diachronic trajectory from literal *sit* to non-literal *sit*. Specific to *sit*, the statistical analysis of the diachronic corpus data in §6.3.3 demonstrated that although adverbials are frequent postverbal components, they are not significant when analysed with respect to the rise of non-literal *sit* over the last two centuries. Instead, the significant postverbal material is the adjectival category.<sup>6</sup> An outstanding question at this point is why the adjectives play a role, and answering this question is the content of the following subsections. The next subsection begins that discussion by identifying the ambiguous surface structure needed for literal *sit*’s reanalysis, while also accounting for the relevant inference involved in the stage of recruitment preceding reanalysis.

### 7.1.2 The ‘idle’ inference in *sit*’s onset context

The characterisation of the recruitment transition is illustrated in Table 7.2, repeated from Table 6.3 and based on the text in Eckardt (2006). The present subsection primarily concerns Stage I, although I also introduce the transition to Stage II.

As can be seen in Table 7.2, the first stage of recruitment comprises an inference that is associated with the original meaning in specific contexts. We begin with identifying this inference for *sit*.

<sup>6</sup>Although there was another significant postverbal category, inverted structures, I propose that they are less crucial, if at all, to the diachronic trajectory. For one, this category was calculated in §6.3.3 to be significant, but with effect size almost half that of depictive predicates. Even though these structures are known to be associated with focus (Culicover & Winkler, 2008; Ward et al., 2017), making them good candidates for a pragmatic strategy of diachronic change, the contrastive counterpart of an inverted surface order is the canonical order for English, SVO. This is a possible, but not a canonical order with *be*, the form with which non-literal *sit* in competition. Future work could investigate whether inverted structures play a more crucial role in *sit*’s diachronic trajectory. In this thesis, however, I leave inverted structures aside.

TABLE 7.2: Recruitment in action (based on Eckardt 2006)

I.	$\phi_{old}$ + inference conventionalises to become $\phi_{new}$	
a.	inference arises in a specific context	INVITED INFERENCE
b.	new meaning is used outside specific context	GENERALIZED INFERENCE
II.	Composition of utterances changes wrt $\phi_{new}$	REANALYSIS
III.	New meaning expands	ACTUALIZATION

We saw already examples in §2.1.1 and §4.3, where a subject referent meeting the literal requirements, i.e., [+sentient, +butt], is not clearly described to be in a sitting position. I call these uses “idle human” uses. Such sentences often contain an explicit temporal interval which is extensive—and too long for maintaining a sitting position in normal contexts. Typically, an entity only rests temporarily in a posture position before moving again (s.a. §2.2). The temporal intervals considered to be “extended” include those longer than 24 hours, although an idle-human interpretation is possible on shorter intervals.<sup>7</sup> Examples from the diachronic corpus are in (8), with the temporal expression boldfaced.<sup>8</sup>

(8) *Idle humans from the diachronic corpus data*

- a. “... Six months you never called, **six months** you sat in Philadelphia with the hard-nose and never once asked me to come back.”
- b. ... prepared for something very different as the result of the peremptory call. “I sat **for one month** with a loaded pistol in my pocket,” ...
- c. Hinckley sat **for hours** in Room 312. He made two local telephone calls, ...
- d. ... **on the morning of the youngest’s wedding**, all of them were sitting in their father’s house wondering what to do with themselves until the evening ceremony ...

[COHA]

The idle-human sentences in (8-a)–(8-b) have reference intervals well longer than 24 hours. In both, the subject referent is in situations where they are most likely not in sitting positions the whole time: in (8-a) the addressee is described as stubborn for six months and (8-b) the speaker describes themselves as fearful and therefore armed for the duration of a month. The sentences in (8-c)–(8-d) have reference intervals lasting only

<sup>7</sup>This is in contrast to sentences with explicit temporal intervals and clear sitting interpretations. A corpus example is in (i).

(i) ... in London they sat for four and a half hours without moving a muscle. [COHA]

<sup>8</sup>Note that not all of these examples come from the subset with postverbal temporal PPs. Due to the context dependency of the interpretation, finding idle human sentences within this large dataset is subjective. For this reason, I do not present a quantitative posthoc analysis, such as the one presented in §7.2.1. It can be noted that there are few idle human sentences, even within the 186 sentences with postverbal temporal PPs, and that they are from throughout the two centuries of the dataset. A follow-up study could use a corpus source with data from before 1800, to confirm that this is the likely onset context.

a few hours, but still with an idle-human interpretation. In (8-c), the subject referent of *sat*, Hinckley, is described to be located in a hotel room for many hours. Despite the possibility that he was in a sitting position for many hours, the interpretation is rather that he did not leave the room. Similarly, in (8-d) the family members are idle, while not necessarily in sitting positions.

The examples in (8) all do not entail sitting positions and they all carry an ‘idle’ inference. This inference, as indicated by its name, describes the subject referent as not being active in some way, where the expected activity is context-dependent. I could not access the extended contexts of these sentences, but it is still possible to hypothesise what the expected, or alternative, activities are for these idle humans. For the subject referents in (8), the expected activity could be the following. The alternative activities for the addressee in (8-a) include having communicated with the speaker during that time, instead of stubbornly remaining silent and far away. For the speaker in (8-b) the alternatives include not having to carry a loaded weapon during that month when they were afraid. For the subject referent in (8-c), who seems to be under surveillance, the alternative activities include changing location and whatever activity, possibly criminal, that caused this person to be watched so closely. Finally, for the family members in (8-d), the alternative activities include the person-specific activities they would be doing on a given morning. In the case of idle humans, the main verb’s content is not fully entailed, as the subject referent is not in a sitting position; however the ‘stationary’ entailment persists. This is especially clear in sentences with an explicit naming of the location, such as (8-c), modified in (9) with a same-speaker continuation contradicting the ‘stationary’ entailment.

(9) Hinckley sat for hours in Room 312. #He left the room multiple times.

In (9), it is infelicitous to describe Hinckley as having moved from the overall location, Room 312. The diagnostics in §4.2 confirmed that the ‘stationary’ entailment is found with both literal and non-literal uses of *sit*.

At this point, in Stage Ia of the trajectory illustrated in Table 7.2, the ‘idle’ interpretation is subtle. It is specific to sentences with extended temporal intervals, but its interpretation is not necessarily conscious for the language users of the community (s. §6.1.3). According to Eckardt (2006), building on Traugott (1992, 1996, 2003) and Traugott & Dasher (2002), the inference involved in Stage I of the transition is not necessarily a salient one, although it can be commented upon by the speakers of that language community. In addition, we know from §4.2 that the ‘idle’ inference eventually becomes consistently associated with non-literal *sit*, while it is only present with literal *sit* when idleness is explicitly mentioned.

Before moving on to the transition to Stage Ib, two notes are in order. First, it is implausible that the ‘stationary’ entailment was the key inference for two reasons. For one, it is already conventionally associated with the target item. In this diachronic examination, we are looking for an inference not yet conventionally associated with that item. Secondly, it is expected that some part of the original meaning changes: with *be going*

to in §6.1.3, for example, the ‘movement’ inference disappeared from this expression. However, it is not expected that an item immediately loses all of its meaning. That is, it would not be expected that, e.g., *sit* loses both the posture-encoding component and the ‘stationary’ entailment simultaneously. Instead, based on the theory presented in §6.1, the more likely scenario is that only one component of the meaning is lost in the first transition. In line with this, it has been proposed for Bulgarian posture verbs and Arabic ‘sit’, as presented in §6.2, that only the posture description disappeared from the first version of the new uses.

The second note is that the synchronic data in Chapter 3 indicated that many postverbal adjectives with non-literal *sit* are *idle* synonyms. As the inference was shown to be present for non-literal *sit* even without *idle*, I assume that when this adjective is explicitly used, it is re-enforcing the inference (s. §4.2). Within the diachronic dataset from §6.3, *idle* is not very common, found in five of the sentences with sittable subjects, and synonyms do not appear much either. An example is in (10).

- (10) ... for want of other employment, while he sat **idle**, he took it into his head to think of magical squares ... [COHA]

The subject referent of (10) is described as not having a job, and during that reference interval he devised an idea. The reference interval is not explicitly delimited in this snippet, but it is likely more than 24 hours. The male person in (10) is not interpreted to be in a sitting position. Although it is not clear what a magical square is, or whether it is viewed positively, the idleness lasts as long as the period of unemployment. This is because *idle* functions like a depictive predicate: the subject referent is presumably a human, capable of transitioning into a sitting position, and although the interpretation is non-literal, the verb is still a lexical one. The modified sentence in (11) demonstrates the optionality of the postverbal adjective, similar to the diagnostics used throughout this thesis; if it were not optional, it could not be argued that *idle* is a depictive predicate.

- (11) Phil was unemployed for a while. While he sat (**idle**), he came up with magical squares.

In (11), it is possible to omit the adjective, without altering the grammaticality; however, the interpretation does change. In the current use of non-literal *sit*, the postverbal adjectives are the main predicate of the sentence and are non-omissible. As such, examples such as (10) represent an intermediary form, between literal and non-literal *sit*.

For the transition from Stage Ia to Ib, as represented in Table 7.2, language users generalised the ‘idle’ inference from extended temporal intervals and/or postverbal adjectives encoding ‘idle’, to other sentences with sittable subjects. The generalisation of the ‘idle’ inference to other contexts could have been possible because of alternatives: the ‘idle’ inference carries meaning that there are alternative states of the subject referent, and, as I argue in §7.2.2, the postverbal component which is focussed can also activate alternative properties of the subject referent. I hypothesise that these sentences were accompanied

by the ‘idle’ inference, and that they contained other postverbal adjectives. This hypothesis is based both on the statistical analysis of the diachronic corpus data in §6.3.3, where postverbal adjectives were shown to be a significant predictor, and the literature review in §5.4.2, where I discussed how authors claim for cross-linguistic data that depictive predicates are in the focus domain of a sentence.

Another possibility is that postverbal locatives also play a role, considering that they can also be ambiguous between an adjunct with the literal use and a predicate with the non-literal use. Even if some authors, such as Heidinger (2018) and Heidinger & Onea (2021), claim that depictive predicates are more likely to be focussed than other adjuncts like locatives and instrumentals, I do not rule this possibility completely out in this thesis: their arguments are based primarily on Spanish data and the object of investigation in this thesis is an English posture verb. I do, however, argue that postverbal locatives could not be the sole component driving the change, contra accounts of posture verbs such as Kuteva (1999, 2001) and Camilleri & Sadler (2019, 2020), presented in §6.2.

In the remainder of the current subsection, I present corpus examples of postverbal adjectives with sittable subjects, then motivate the hypothesis. The subsequent section follows up with an empirical post-hoc examination and a theoretical account of this hypothesis. Two sentences from the COHA dataset are in (12).<sup>9</sup>

(12) *Idle humans, generalised*

- a. Macarius the Younger, who felt so guilty about swatting an insect that he sat **naked** in a swamp for six months.
- b. The mountain lion had just lost his mate and was sitting **alone** in his new cage.

[COHA]

In the sentence in (12-a), the subject referent is described to have been naked for six months, and during that time he was located in a swamp. In the sentence in (12-b), the subject is described as being alone in his cage after his partner died or left. A sitting position is not strictly entailed for either of the subjects.<sup>10</sup> The modified sentences in (13) demonstrate this.

(13) *Subject referents who are not sitting*

- a. Macarius the Younger felt so guilty about swatting an insect that he sat naked in a swamp for six months. He was not in a sitting position the whole time.

<sup>9</sup>These sentences are from the 1980s and the 1960s, respectively. It is difficult to find examples in the dataset which illustrate idle humans, or idle animals, and which are from earlier years. However, I do not see this as contradictory to my proposal: according to the results presented in §6.3.3, non-literal *sit* began to rise in frequency only in the last two decades of the 1900s. In addition, the data used in this corpus study is copy-edited and from relatively formal sources. This means that, unlike, say, a blog, it is possible that earlier innovative uses of *sit* were edited out.

<sup>10</sup>That is, this entailment does not hold from a synchronic perspective. A consequence of not having extended contexts available is that this part of the analysis relies on synchronic interpretations of the data.

- b. The mountain lion had just lost his mate and was sitting alone in his new cage. He paced back and forth.

The same-speaker continuation in (13-a) targets a sitting-position description, and it is felicitous. The continuation in (13-b) is also felicitous. This suggests that the posture feature has been lost in these uses. Similar to the utterances with extended temporal intervals in (8), there is an inference that the subject referents of (13) are idle or somehow inactive. The infelicitous continuations in (14) illustrate the ‘idle’ inference’s presence.

(14) *Subject referents who are idle*

- a. Macarius the Younger felt so guilty about swatting an insect that he sat naked in a swamp for six months. #He was productive during those six months, writing his next tome.
- b. The mountain lion had just lost his mate and was sitting alone in his new cage. #He was roaring and interacting with the guests.

The infelicitous continuations in (14) suggest that the ‘idle’ inference is now more strongly associated with *sit*. Interestingly, when *sit* is replaced by *be*, the continuations are felicitous.

(15) *The copula be and no idleness*

- a. Macarius the Younger felt so guilty about swatting an insect that he **was** naked in a swamp for six months. He was productive during those six months, writing his next tome.
- b. The mountain lion had just lost his mate and **was** alone in his new cage. He was roaring and interacting with the guests.

The sentences in (15) demonstrate that there is a semantic contrast between *be* and this idle use of *sit*. That is, speakers have a reason to use this non-literal interpretation of *sit* instead of *be*, because the former carries an additional ‘idle’ inference that the latter lacks. At this stage, with sittable subjects and no strict posture entailment, the form of *sit* is still a lexical verb. This is supported by the fact that omitting the postverbal components of the original sentences does not affect well-formedness, as is shown in (16).

(16) *Idle humans and omissible postverbal material*

- a. Macarius the Younger sat (naked in a swamp).
- b. The mountain lion was sitting (alone in his new cage).

Both sentences in (16) contain the old, lexical form of *sit*, which means that it is possible to use the sittable subject without a postverbal component. However, note that when this material is omitted, a sitting position is encoded (s. Maienborn 1990, 1991, presented in §2.3.2). Sentences with an encoded sitting position followed by a sentence attempting to cancel the ‘idle’ inference are shown in (17).



(17) *Idle humans and omissible postverbal material*

- a. Macarius the Younger sat. He was productive during that time, writing his next tome.
- b. The mountain lion was sitting. He was roaring and interacting with the guests.

The sentences in (17) lack a postverbal component, and therefore encode a sitting position. The felicity of same-speaker continuations show that the ‘idle’ inference is not present with sitable subjects clearly described to be in a sitting position. This characteristic of posture verbs means that reinterpretations, and then reanalysis, of the verb cannot have happened in sentences without any postverbal component.

In sum, this subsection has addressed the research goals (ii) and (iii), submitted in the introduction to the section. Goal (ii) is to identify the onset context, including the relevant inference for *sit*’s change. I argued that the onset context comprises idle humans: sitable subjects not interpreted to be in sitting positions; such uses arise in combination with extended temporal intervals and with an ‘idle’ inference. Sometimes, sitable subjects also appear with *idle* as a depictive predicate. After the ‘idle’ inference is strongly associated with *sit*, the uses generalised to other sitable subject sentences. Goal (iii) is to identify the ambiguous surface structure needed for reanalysis. The crucial linguistic context that enables reanalysis of *sit*, from a lexical verb to a copular verb, is a postverbal component, and I argue that it is more likely postverbal adjectives than postverbal locations which are responsible. The next section further motivates this claim.

## 7.2 The role of postverbal adjectives in the transition

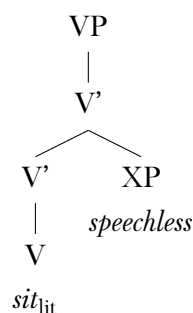
In the previous section I claimed that the transition from literal to non-literal *sit* comprises a recruitment transition, and proposed details of the first stage of that transition. The key component of that first stage is the ‘idle’ inference, the onset context of which contains sitable subjects not entailed to be in a sitting position, plus extended temporal intervals; sometimes depictive predicates encoding idleness appeared as well. Eventually, the ‘idle’ inference became consistently associated with non-posture-encoding interpretations. According to the accounts presented in §6.1, the second diachronic stage, reanalysis, can occur after an inference is consistently associated with the target item. Another prerequisite of reanalysis is ambiguous surface structure between utterances with the old and new forms.

In the previous section, I also introduced the idea that the most likely linguistic context for the reanalysis of *sit* contains sitable subjects with postverbal adjectives. This idea stems from different observations, including from the account of van Gelderen (2018), presented in §6.2.3. Van Gelderen proposes that postverbal modifiers, ambiguous between adjective and adverbial, played a crucial role in the development of copular verbs, such as *remain*. In addition, the statistical analysis of the diachronic corpus data in §6.3.3 indicated the importance of these adjectives. A constructed example of the ambiguous

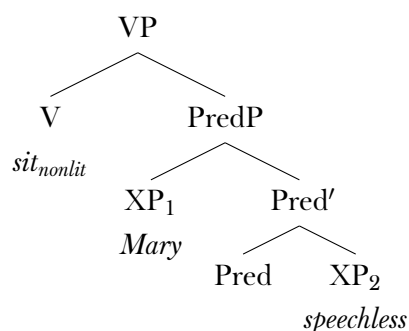
surface structure is in (18), and the two underlying structures are illustrated, based on the claims from §5.2.

(18) Mary sat **speechless**.

a. *The structure of literal sit,  $\phi_{old}$*



b. *The structure of non-literal sit,  $\phi_{new}$*



The sentence in (18) originally had the structure in (18-a), where the adjective *speechless* is an adjunct, a depictive predicate. The verb then was reanalysed as a copular verb, and so the adjective functions as the main predicate; this is illustrated in the structure in (18-b). After *sit* with sittable subjects underwent reanalysis, different subject types, such as inanimate entities, could combine with non-literal *sit*. I return to the current picture of non-literal *sit* in §7.3.

In the present section, I motivate the importance of the postverbal adjectives in the reanalysis context, by integrating insights from previous chapters and also by introducing and applying information-structure theory to *sit*. The remainder of this introduction summarises the relevant insights of the previous chapters and the information-structure account of the present section.

In §4.1.2 I discussed how whale-type subjects more often combine with postverbal adjectives than with postverbal locations. There, I proposed that the content of the adjective can overtake an interpretation of that butt-less subject being in a sitting position. The content of these adjectives is often synonymous with the two inferences of non-literal *sit*: 'stationary' and/or 'idle'. Another way to look at it is that the content of these adjectives does not highlight any posture meaning at all, unlike the content of the adjectives which often combine with the other two posture verbs, *stand* and *lie* (s. discussion of synchronic

Corpus Study II in §3.2.4). The information structural effect of the adjective with this non-literal *sit* subject arises, on my hypothesis, because the adjective is highlighted, i.e., focussed, thereby introducing salient alternatives. This information structural effect of the focussed adjective licenses a felicitous interpretation of the non-literal posture verb, *sit*, with a sentient, yet butt-less, subject.

My hypothesis about the reanalysis of literal *sit* to non-literal *sit* is structured in a similar way: in some utterances a sittable subject, i.e., a subject which is [+sentient, +butt], combined with non-posture-encoding *sit* and a postverbal adjective, i.e., a depictive predicate. Based on the claims presented in §5.4.2 that depictives are often the focussed item in a sentence (Winkler, 1997/2011; Geuder, 2000; Himmelmann & Schultze-Berndt, 2005a, a.m.o.) and that they are likely to have more focus affinity than other adjunctive types (Heidinger, 2018; Heidinger & Onea, 2021), I argue that this combination is marked. This is crucial to *sit*'s change, as marked structures represent the loci of change. The roadmap for the present section is the following. In §7.2.1, I re-examine the subset of the diachronic corpus study data which contained postverbal adjectives. The results of that re-examination indicate that, indeed, postverbal adjectives which do not describe posture are a crucial factor in *sit*'s change. Building on the results of §7.2.1, I investigate in §7.2.2 how postverbal adjectives could be involved in the structural reanalysis of *sit*. In this investigation, I deviate from the case study of *be going to* (Eckardt 2006; presented in §6.1.3), by developing ideas about information structure influence, and thereby demonstrating that two different pragmatic strategies were utilised by a language community throughout recruitment. This marked structure comprised grammatical highlighting of the postverbal adjective, and, as I argue, the posture-encoding meaning of *sit* is superseded by that highlighting. Eventually, speakers reanalyse the postverbal predicate as the main predicate of the clause, which means that *sit* is reanalysed as a copular verb. This reanalysis gives us the non-literal *sit* described in Chapters 2–5.

### 7.2.1 Posthoc analysis of the DEPICTIVE predictor

For this posthoc analysis, I quantify details of the postverbal adjectives in the dataset, laying the groundwork for §7.2.2.<sup>11</sup> Note that I do not quantify in this posthoc analysis the frequency of 'idle' adjectives, but rather the number of clearly posture-encoding adjectives. The latter approach was chosen for its clarity, considering that posture-encoding adjectives are less likely than 'idle' adjectives to be ambiguous or subjectively borderline categories. In addition, I examine whether it is only a postverbal adjective or there is, e.g., a location and an adjective together, similar to the examination of all three posture verbs' postverbal adjectives in §3.2.4.

Preliminary to the posthoc examination, I re-read the sentences in the postverbal adjective category of the dataset, where I observed that many of these sentences lack a location. This observation is remarkable, because in the synchronic studies reported in

<sup>11</sup>As was noted in the preliminaries of the corpus study, even though the variable is named DEPICTIVE, it represents the main adjectival predicates which combine with non-literal *sit*.

Chapter 3, a sentence with a depictive but no location is a rare occurrence (15% and 4%, respectively). Even though those two previous corpus studies only looked at nonsittable subjects after the year 2000, it is nonetheless an interesting difference if the earlier sentences with sittable subjects more often lack a locative phrase.

In the present subsection, I report the second step of the posthoc examination, where I explore how the postverbal adjective and a location play a role in the diachronic change of *sit*. First, I identify how many sentences contain posture-describing adjectives, i.e., predicates clearly describing the posture of the subject for sittable subjects only. I restrict this first part of the examination to sittable subjects only, as the nonsittable ones, by definition are not able to be in a sitting position. Then, I examine how often a location appears in the sentences of the postverbal-adjective subset for both sittable and nonsittable subjects, thereby quantifying the impression from the preliminary re-examination.

Examples of sittable subjects with posture-describing adjectives can be seen in (19). As a reminder from the claims about literal posture in §2.2, the butt is a body part essential to sitting; by definition the buttocks are where the torso meets the legs, and these two latter parts are important to posture positions. For the present examination, I identify three types of the posture-describing adjectives with *sit*. One with a bent torso, i.e., that there is an angle of less than 180 degrees between the lower and upper torso, as in (19-a); one with a vertical torso, i.e., that the upper and lower torso is at 180 degrees as in (19-b); and one with legs that are crossed-over, an arrangement of the legs only common when in a sitting position, as in (19-c).

(19) *Three types of posture-describing adjectives*

- a. For Hilton CEO Stephen Bollenbach, who sat **slumped** in a chair [...]
- b. The women sat **erect** as they paddled away and did not once look back.
- c. John Lennon, wearing jeans and a blue tank top, sat **cross-legged** on the bed.

The subject's torso in (19-a) is described with *slumped*, which means that the shoulders and possibly also the upper back are turned inward. That is, *slumped* describes a bent torso in a way associated with sitting, not standing or lying. In contrast, the depictive in (19-b) is *erect* and it describes the torso of the subjects to be vertical. While it is possible to be standing erect, this sentence describes women in canoes; one does not stand in a canoe. Finally, the adjective in (19-c) does not describe the subject's torso, but rather their legs. It most likely to have the property of being cross-legged ascribed to somebody who is in a sitting position, although this is also possible in a lying position.

Sentences with sittable subjects and postverbal adjectives like those in (19) were filtered out of the new subset. There were 65 sentences with these posture-describing predicates identified, which comprises 15% of all the postverbal-adjective observations in the sittable subset. This is a relative low distribution: if, say, more than 50% of the postverbal adjectives explicitly described the subject as in a sitting position, the reanalysis proposal might be in danger of being rejected, as it then would not seem likely that postverbal

adjectives form part of the onset context for this change.

In Table 7.3, I report the distribution of sentences with and without a location (A), as well as the type of postverbal adjective (B). The cell with the majority is highlighted in each subtable.

TABLE 7.3: Breakdown of literal sentences with posture adjectives

(A) Location			(B) Content		
Category	n	%	Category	n	%
With loc.	44	67,7%	'Bent torso'	36	55,4%
Without loc.	21	32,3%	'Straight torso'	19	29,2%
			'Cross-legged'	10	15,4%
	<b>65</b>	<b>100%</b>		<b>65</b>	<b>100%</b>

Beginning with Table 7.3A on the left, we can see that about two-thirds of the sentences have a location. These locations are usually a “sitting apparatus”<sup>12</sup> or a horizontal surface,<sup>13</sup> further encouraging a posture interpretation. As for the content of the posture adjectives, we can see in Table 7.3B that the most common type, at slightly more than half, is the one describing the subject’s torso as bent. These are items like *slumped*, *hunched*, *huddled*. The next most common category of Table 7.3B is ‘straight torso’, accounting for a bit less than one-third of the sentences. Finally, those postverbal adjectives describing the position of the subjects’ legs are the least common, with about 15 percent. Examples for each category of Table 7.3 are in (20); in each, the postverbal adjective is boldfaced, and the location is underlined where applicable. All are clearly posture-encoding.

- (20) a. *Bent torso*
- (i) I sat **huddled** on a bench in the mail room.
  - (ii) The men sat **huddled up**, with bowed backs, [ . . . ]
- b. *Straight torso*
- (i) Only H. C. Morphett, No. 5, sat **erect** in the [small boat].
  - (ii) The women sat **erect** [ . . . ] and did not once look back.
- c. *Cross-legged*
- (i) John Lennon, [ . . . ], sat **cross-legged** on the bed.
  - (ii) [ . . . ] I sat **crosslegged** with the Malays, dressed like them [ . . . ]

[COHA]

In the two bent-torso sentences of (20-a), the subject’s referent is described as being in a huddled, or crouched, position. This means that the shoulders and/or back are bent over. In the two straight-torso sentences of (20-b), the subject’s referent is described as

<sup>12</sup>The label “sitting apparatus” was used in the discussion of balloon-dog subjects in §4.1.3. These entities, which include corpses and unconscious bodies, deliver semantically odd interpretations in combination with locations such as chairs and benches. In the present discussion, I use “sitting apparatus” for similar locations.

<sup>13</sup>In §2.2.2–2.2.3, I defined the ground for figures in posture positions as being a horizontal surface. For the literal sitting position, the main point of support on this surface is the butt. Compare the relative lack of horizontal surfaces for the whale-type subjects of non-literal *sit*, described in §4.1.2.

having their torso rigidly vertical. Finally, in the cross-legged sentences of (20-c), the subject's referent is described as having their legs crossed over one another. In the (i) sentences, there is a location: a bench, a small boat, and a bed. Both the bench and the bed are clearly categorisable as sitting apparatus. The small boat is also categorisable as a sitting apparatus, because these vehicles usually have one or two horizontal pieces of wood and room for little else.

In this first portion of the posthoc exploration, I identified posture-encoding adjectival predicates in 65 sentences, or 15% of the sittable subset. The identification of such content is important, because the sought-after onset context needs to allow a sittable subject to not be interpreted as sitting. A posture-encoding predicate forces a sitting interpretation and is therefore not part of an eligible onset context for the *sit* diachronic path. With this interference filtered out, the rest of the subsection examines non-posture-encoding postverbal adjectives for both sittable and nonsittable subjects.

In terms of variables, this examination had three. The dependent variable SUBJECT is categorical with two levels, SITTABLE and NONSITTABLE. One independent label is the scale variable YEAR, and the other is the categorical variable LOCATION which has two levels YES and NO. This examination is exploratory in nature, and as such, it is a hypothesis-generating one, meaning that only descriptive statistics were calculated.

My method was the following. I first created a new data sheet, copying from the original one all the sentences marked depictive, excluding the posture-describing ones. This means that the previous information of YEAR and USE were copied over as well. I labelled each sentence according to whether or not there was a location in the same clause as *SIT*. Examples of each type of LOCATION are in (21)–(22); the postverbal adjective is boldfaced and the location, if present, is underlined.

(21) *Sittable subjects*

- a. [...] while their child sat **unharm**ed among the cushions.
- b. Mary, the less excitable of the two, sat **moody and speechless**.

(22) *Nonsittable subjects*

- a. A powerful Atlas missile sat **pois**ed on its launching pad at Cape Canaveral.
- b. The remaining two [vessels] sat **idle** or were chartered for less profitable short hauls [...]

[COHA]

The resulting distribution of LOCATION per SUBJECT is displayed in Table 7.4. The majority for each use is highlighted.

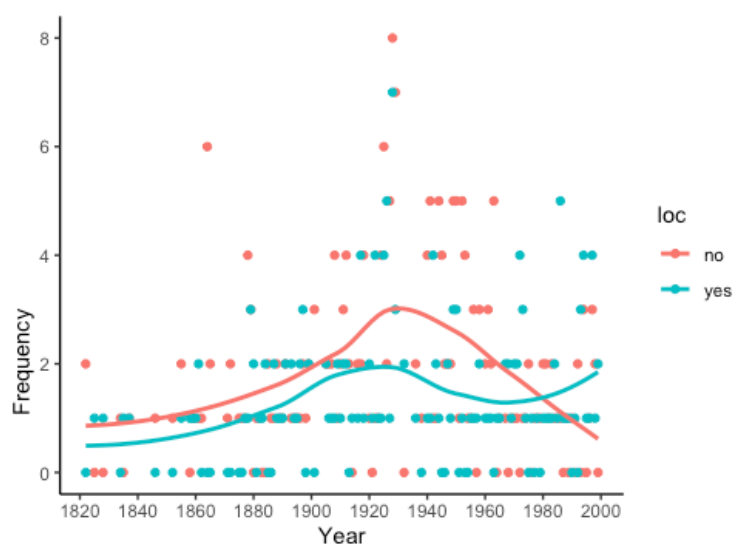
As seen in Table 7.4, there is a difference in distribution across the use levels. The sittable subjects indeed more frequently do not have a location, with a ratio of about three-fifths to two-fifths. The difference within the nonsittable use is much larger, with more than 80 percent of the sentences containing a location. In other words, the majority level of LOCATION for the sittable subjects is NO, while for the nonsittable subjects it is YES.

TABLE 7.4: Distribution of location per SUBJECT, with the DEPICTIVE label

	Sittable		Nonsittable	
	n	% use	n	% use
With loc.	126	38,1%	28	82,4%
Without loc.	205	61,9%	6	17,6%
	<b>331</b>	<b>100%</b>	<b>34</b>	<b>100%</b>

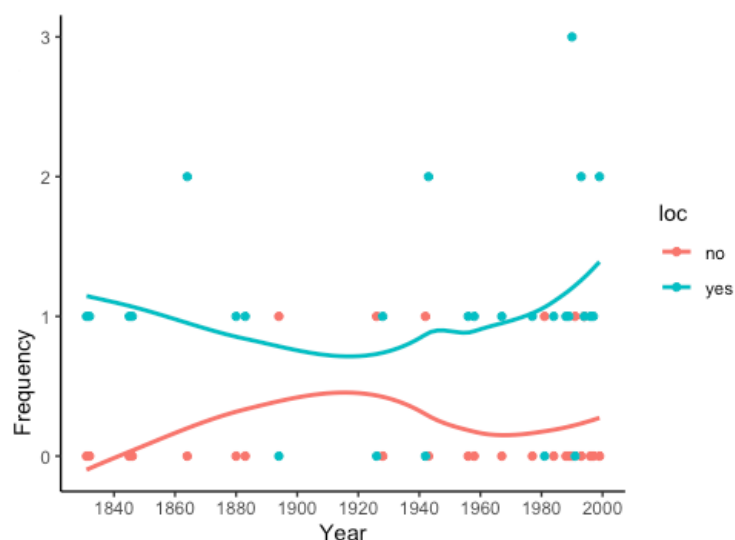
The following scatterplots, created with `ggplot2` (Wickham et al., 2019), display the diachronic change in frequency of sentences with and without a lexical location for each SUBJECT level. Figure 7.1 shows the data points for SITTABLE, and Figure 7.2 for NONSITTABLE.

FIGURE 7.1: Distribution of locative argument per YEAR, SITTABLE only



In Figure 7.1, the overall tendency of sittable subjects without a location, i.e., the red line and dots, is higher than those with a location, i.e., the blue line and dots. The location-less sentences seem to peak in the early-mid 1900s, continually decreasing.

FIGURE 7.2: Distribution of locative argument per YEAR, NONSITTABLE only



In Figure 7.2, the nonsittable subjects generally have a higher frequency of sentences with a location, seen by the blue line and dots. Those few nonsittable subjects without a location, represented by the red line and dots, only begin to appear at the end of the 1800s. Data such as this supports the typical characterisation of *sit* as a locative verb, like we saw in the accounts presented in §2.2. That is, even though postverbal adjectives are crucial to reanalysis, non-literal interpretations still often include postverbal locatives.

In summary, this data shows that *sit* with sittable subjects and a postverbal adjective more often appear without a location, especially in the beginning of the interval, i.e., the mid to late 19th century. The observations with nonsittable subjects, on the other hand, are observed much less frequently and predominantly contain a location. In other words, this data strongly suggests that the reanalysis context contains a postverbal adjective only and a sittable subject. Then, once *sit* was reanalysed by enough language users, nonsittable subjects could combine with the new form of *sit*. In the next subsection, I account for how the postverbal adjective played a role in reanalysis, focussing on the pragmatic strategy of the language users.

### 7.2.2 Information structure and depictive predicates

In the present subsection, I provide a theoretical explanation for the data of the previous subsection. The main idea put forth is that the ambiguous surface structure of *sit*'s reanalysis was composed of postverbal adjectives with sittable subjects. This claim is motivated by the information-structure status of depictive predicates with sittable subjects, i.e., the focus affinity of the depictive predicate (s. §5.4.2), plus the content similarities of postverbal adjectives in both uses of *sit* (s. §5.4).

The idea behind investigating the information structure of the reanalysis context is that



focus is a means of producing a marked expression.<sup>14</sup> This sort of grammatical highlighting of more complex meaning relates directly to the dynamic component of diachronic transitions like recruitment (Deo, 2014, 2015a).<sup>15</sup> That is, a marked expression is more often the locus of change than an unmarked one. In the case of *sit*, having a component other than the verb in focus enables the loss of posture meaning, even when the subject meets the requirements to be in a sitting position (s. §2.2). Characterising the information structure in the ambiguous structure of reanalysis makes a concrete, and dynamic, connection between markedness and reanalysis. This subsection proceeds by first outlining my assumptions about information structure and focus, and then re-examining sittable subjects with depictive predicates in light of this theory.

Within the linguistics literature, there are various definitions of “focus”. In this thesis, I assume that there are different ways to realise focus marking, and focussed elements relate the respective sentence to a set of alternatives, regardless of focus type (Rooth, 1985, 1992; Krifka, 2001, 2008). It is well known that English, like German, prosodically marks focus with nuclear pitch accents, and that the interpretation of the focus structure depends on contextual information (Selkirk, 1985, 2007; Féry, 1993, 2008). Following Cruschina (2012, 2021), I assume that different interpretations of focus depend on how the alternatives are defined. That is, although many authors tend to distinguish between two subtypes of focus, contrastive and non-contrastive, here I assume a hierarchy of discrete types based instead on degrees of contrast with respect to the alternatives.

A hierarchy proposed by Cruschina (2021) is displayed in (23). The types are discussed in more detail below.

- (23) *A hierarchy of contrast, ordered from smallest to greatest degree of contrast*
- a. INFORMATION FOCUS: a contextually open set (only pragmatically delimited);
  - b. EXHAUSTIVE FOCUS: exhaustive identification or the exclusion by identification with respect to a set of alternatives;
  - c. MIRATIVE FOCUS: the proposition asserted is more unlikely or unexpected with respect to the alternative propositions;
  - d. CORRECTIVE FOCUS: correction of explicitly given alternatives.

[ Cruschina 2021, p. 5]

In defining this hierarchy, Cruschina proposes that the degrees of contrast are categorised by how active the alternatives are. When the alternatives are not explicitly stated, like in information focus (23-a), they are pragmatically identifiable. Those types in (23) with higher degrees of contrast are more likely to be marked grammatically than those with lower degrees of contrast (Zimmerman, 2008; Hartmann, 2008; Cruschina, 2012,

<sup>14</sup>As argued for in §7.1.2, non-literal *sit* semantically contrasts with *be*. The posture verb is already eligible as the marked expression, because it contributes more complex meaning than *be*: the ‘stationary’ entailment and the ‘idle’ inference. The focus associated with the depictive predicate provides additional complexity.

<sup>15</sup>This was additionally noted in FN12 of §6.1.3, in the discussion of *be going to*.

2021, a.o.). Sometimes known as “emphatic marking”,<sup>16</sup> this sort of highlighting includes clefts, syntactic movement, intonational changes, morphological markers, or a combination thereof. In the following examples of Italian and Hungarian, we see some evidence of grammatical highlighting.

The first type, information focus, is shown in (24). This example can be highlighted by prosodic means, i.e., the intonational contour. The excluded alternatives are not active, but are understood as members of the same set of animals.

(24) *Information focus*

- a. Che cosa avete visto ieri allo zoo?  
 what have.2PL seen yesterday at-the zoo  
 ‘What did you see yesterday at the zoo?’
- b. Abbiamo visto **un tigre**.  
 have.1PL seen a tiger  
 ‘We saw a **tiger**.’

[ ITALIAN; Cruschina 2021, p.6 ]

The excluded alternatives of *tigre* ‘tiger’ would be animals like zebras and lions, pragmatically identifiable even if they are not explicit. Due to the low degree of contrast, it is not entailed that there was no zebra- or lion-seeing eventuality at all; this changes as the degree of contrast increases. Similar to information focus, the set of alternatives in exhaustive focus can be an open one, and the alternatives are not active in the context. Rather, they are pragmatically delineated, like in the case of animals at the zoo in (24) or countries in the Hungarian example in (25).

(25) *Exhaustive focus*

- a. Hol jártál a nyáron?  
 where went.2SG the summer.in  
 ‘Where did you go in the summer?’
- b. **Olaszországban** jártam.  
 Italy.to went.1SG  
 ‘It was Italy where I went.’

[ HUNGARIAN; Kiss 1998, pp. 249–250, cited in Cruschina 2021, p.6 ]

The excluded alternatives of *Olaszországban* ‘Italy’ in (25) would include other countries, e.g., {Croatia, Bosnia Herzegovina, Macedonia}. Exhaustive focus, which is identifiable in Hungarian in that the focussed element appears in the preverbal position, contributes a more contrastive meaning than information focus. In the case of (25), this means that Speaker B went to Italy and Italy only; for the information focus example in (24), such an exclusive inference is very weak, if present at all.

<sup>16</sup>I avoid the use of *emphatic* or *emphasis* here, because like many terms there are various senses of it. Instead, I use *contrastive* or *contrast*, in addition to providing more precise interpretations when possible.

For the third type of the hierarchy, mirative focus, the alternatives may be explicitly given, but this is not a necessity. This type of focus in Italian is marked by fronting the constituent. The example in (26) shows the two possibilities in an Italian example; the alternative is underlined when present.

(26) *Mirative focus*

- a. Ci avevano detto che non ce n'erano e invece ...  
 'They had told us that there weren't any, but ...'
- b. Ci avevano detto che avremmo visto solo zebre e leoni e invece ...  
 'They had told us that we would only see zebras and lions, but ...'
- c. ... **una tigre** abbiamo visto ieri      allo zoo.  
 ... a tiger have.1PL seen yesterday at-the zoo  
 'we saw a **tiger** yesterday at the zoo!'

[ ITALIAN; after Cruschina 2021, p.6 ]

In the first possible antecedent (26-a), the alternatives to the eventuality of seeing a tiger are not explicit, while in the second one (26-b), the alternatives of a tiger-seeing eventuality are given as {zebra-seeing, lion-seeing} eventualities. The continuation in (26-c), regardless of which of the two antecedents it completes, expresses that some expectation was not met. For (26-a), the fronted *un tigre* expresses that the eventuality itself was unexpected and for (26-b), it expresses that the eventuality was the least likely of the two named alternatives. These possible alternatives are not necessarily a closed set, in contrast to the requirements for other types of focus.

For the final type of focus in Cruschina's hierarchy, corrective focus, the alternatives must be explicitly given in the preceding discourse. This is illustrated in (27), where again the given alternative in the preceding sentence is underlined.

(27) *Corrective focus*

- a. Martina, tuo padre mi ha detto che avete visto un leone ieri allo zoo.  
 'Martina, your father told me that you saw a lion yesterday at the zoo.'
- b. **Una tigre** abbiamo visto, non un leone.  
 a tiger have.1PL seen not a lion  
 'We saw a **tiger**, not a lion.'

[ ITALIAN; Cruschina 2021, p.6 ]

In (27-b), the speaker corrects the previous speaker's utterance in (27-a) with a fronted focus marking. The alternative to the tiger-seeing eventuality is a lion-seeing eventuality and is explicitly mentioned in the discourse.

The hierarchy of focus types here serves to show the assumptions that (i) any type of focus involves alternatives and (ii) that activeness of alternatives correlates with degree of contrast expressed. Following authors such as Rooth (1992), Roberts (1996/2012), Kadmon (2001), Beaver & Clark (2008), Ginzburg (2012), and Onea & Zimmerman (2019), I assume that a function of focus is to constrain the Question Under Discussion

(QUD). In the minimal pair in (28), the difference in focus is reflected by the difference in QUD; focus accent is indicated by small caps.

(28) *Focus and QUD*

- a. **QUD:** Who listens to Bowie?  
**Assertion:** BAPTISTE listens to Bowie.
- b. **QUD:** Whom does Baptiste listens to?  
**Assertion:** Baptiste listens to BOWIE.

[ Onea & Zimmerman 2019, p. 56 ]

In the first QUD-assertion set in (28-a), the focussed constituent in the assertion is the subject, *Baptiste*, and in the second set in (28-b), it is the indirect object, *Bowie*. Rather than having the same QUD preceding them, each assertion answers a different one. In other words, the QUD in (28-a), asking who listens to Bowie, cannot felicitously be answered by the assertion in (28-b), which focuses an element of that QUD instead of its answer. The minimal pair in (28) demonstrates different focal markings by prosody. As mentioned above, it is also possible to mark contrast with non-canonical surface structure, which is relevant for the reanalysis of depictive predicates.

In order to target the focus of corpus sentences, I follow a method recently developed by Riester et al. (2018) and Brunetti et al. (2021) for reconstructing the QUD and the possible alternatives. Such a methodology is important, because the QUD is more often than not implicit, unlike the constructed examples in (28) might suggest. According to Riester et al. (2018) and Brunetti et al. (2021), the default way of reconstructing the QUD is “backward-looking”, and the content of the QUD is governed by the information status of components in the answering statement. More specifically, the QUD consists of given information and its answer contains new information. The authors outline three principles that can be used to guide the reconstruction, listed in (29).

(29) *Principles of backward-looking QUD reconstruction*

- a. Q-A CONGRUENCE: A QUD must be answerable by the assertion that it immediately dominates.
- b. MAXIMIZE-Q ANAPHORICITY: A QUD should be formulated using all the given semantic content of its answer.
- c. Q-GIVENNESS: An implicit QUD can only consist of given content.

(Brunetti et al., 2021, p. 13)

Each of the principles in (29) strengthens the force of the previous one. The first principle, Q-A CONGRUENCE, is as the authors say, weak on its own. The next one, MAXIMIZE-Q ANAPHORICITY, constrains the focus to not be too broad, by requiring that the QUD consists of the answering assertion’s given content. The final principle, Q-GIVENNESS, further constrains the focus, in that any part of the question that is not the wh-phrase is given

content. They formulate this final principle based on the idea that the focus of the assertion is the answer to the WH-question that is the QUD (Rooth, 1992). Below, these principles are applied to (30), an example from Brunetti et al. (2021). In (30), the first sentence contains the first assertion in an excerpted dialogue where Barack Obama is the speaker. The second sentence is the target assertion. The first assertion is included, because we are undertaking a backward-oriented reconstruction.

- (30) While studying here, my father met my mother. She was born in a town on the other side of the world.

The first assertion in (30) provides the information that the father studied at the context-specific location and at that location, Obama's father met his mother. The second assertion in (30) then provides new information about the mother, describing where she was born; the given content in this assertion is Obama's mother, referred to by *she*.

Table 7.5 applies the methodology to the excerpt in (30). Both the first and second assertions are included in the table. After the first assertion, the possible QUDs are listed, distinguished from one another numerically, and then the second assertion in the bottom row. Based on the principles of (30), the validity of each QUD is marked: # for a QUD incongruous with the second assertion and unmarked for a congruous one.

TABLE 7.5: Applying the principles of QUD reconstruction; example adapted from Brunetti et al. (2021, p. 13)

<b>Assertion</b>		While studying here, my father met my mother.
QUD1	#	What did he do after studying here?
QUD2	#	What else?
QUD3	#	Where was Obama's mother born?
QUD4		What about Obama's mother?
<b>Assertion</b>		She was born in a town on the other side of the world.

The first possible QUD in Table 7.5 contains given content about Obama's father and that he studied here, which adheres to the principles in (30). However, QUD1 does not ask the question answered by the relevant assertion, as this assertion describes information about the mother, not the father; QUD1 goes against the principle of Q-A CONGRUENCE, as well as MAXIMIZE-Q ANAPHORICITY. QUD2 is a broader one, asking only *what else?*. In a way, the assertion about Obama's mother answers this, but QUD2 does not contain any given context of the answering assertion, thereby violating the principle of MAXIMIZE-Q ANAPHORICITY. QUD3 also is answered by the assertion, but this option provides information not given from the preceding assertion, going against the third principle of Q-GIVENNESS. Finally, QUD4 is congruous, as it adheres to all three principles: it is answered by the relevant assertion, its content contains all the given information of the answer, and it implicitly includes given information from the preceding context. We will now use the above theory and method to look at the information structure of sentences with *sit* and postverbal adjectives. When the subject of *sit* is a sittable one, I assume that the adjective is a depictive secondary predicate, because it is omissible.

As was reported in §5.4.2, these adjuncts have a high degree of focus affinity, often appearing in the focus domain. The statistical analysis of the diachronic data in §6.3.3 demonstrated that postverbal adjectives, while less common than postverbal locations, are more significant in the diachronic trajectory of *sit*. This means that not only are depictive predicates easily associated with focus, indicating that they can be marked structures, but there is empirical evidence that they are significant in *sit*'s transition. Based on this, I proposed in §7.1 that depictive predicates with sittable subjects constitute the most likely candidate for the ambiguous structure needed in the reanalysis of *sit*.

A defining feature of depictives (s. §5.4.1) is that they ascribe a property to the subject referent, and this property holds for the interval of the main eventuality. In addition, it was noted in §5.4.2 their optionality, a defining feature, suggests that their contribution to the discourse is new information; according to recent studies on Spanish adjuncts, depictive predicates are not core adjuncts, unlike locatives or instrumentals, a consequence of which is their higher focus affinity. In the following, we examine both depictives and postverbal locations with the QUD methodology.

Within the sentences in the dataset, many with depictive predicates contain active alternatives of that ascribed property, suggesting that the contrast is salient. In fact, many of the depictive sentences contain contrastive elements in their contexts: with adversative connectives like *but*, *while* in (31), or with explicit mention of the unlikelihood of the eventuality based on the speaker's expectations, such as in (32), where the clause with the depictive is highlighted and contrastive markers are underlined.

- (31) a. **The warriors sat mute and mournful**, while the women filled the air with loud lamentations.  
 b. The criminal seemed impressed by the speech of the advocate, but **the judge sat impassive** [ . . . ]
- (32) The reception was even cooler than he expected. Ann Whitall never even appeared; while **her husband sat motionless and silent by the fire**, without even looking at the brilliant young French nobles, [ . . . ]

[COHA]

The examples in (31) both have inferences of a semantic contrast, and the alternative is active within the same sentence. In (32), the first sentence of the example indicates that the behaviour of the host and hostess was unlikely according to the expectations of the speaker. The alternatives are not active, but could be {friendly, chatty, polite, reserved}. There are also sentences from the dataset with a lower degree of contrast, i.e., without overt markers or contextual details about expectations, like in (33).

- (33) In the coppersmiths' bazaar there was an incessant clattering of little hammers upon hollow metal. **The goldsmiths sat silent** in their pens within a vast, dim building, or bent over their miniature furnaces making gold or silver filigree.

[COHA]

In (33), a new group is introduced, members of the set that could be called “metal workers”. The depictive predicate additionally provides information about their state, ‘being silent’, which is in contrast to the *incessant clattering* of the coppersmiths, introduced in the previous sentence. In this way, the depictive’s clause introduces new information, and {noisy} would be in the alternative set.

In the following I use QUD-reconstruction to confirm that depictive predicates are in a sentence’s focus. However, because the surrounding context is a determining factor in the interpretation—and because depictive predicates are not focus markers on their own—it seems that these items themselves do not conventionally encode one specific type of focus. For this reason, I use the least contrastive sentence for the QUD reconstruction.<sup>17</sup> Table 7.6 illustrates the QUD reconstruction with the goldsmith sentence from (33).

TABLE 7.6: Applying the principles of QUD reconstruction to a depictive sentence

<b>Assertion</b>		In the coppersmiths’ bazaar there was an incessant clattering of little hammers upon hollow metal.
QUD1	#	What else about the coppersmiths?
QUD2	#	What else about the hammers?
QUD3	#	How can the other workers be described?
QUD4		How can the goldsmiths be described?
QUD5	#	Where did the goldsmiths sit?
QUD6	#	How did the goldsmiths sit?
<b>Assertion</b>		<b>The goldsmiths sat silent in their pens, . . .</b>

The first assertion of Table 7.6 contributes information that there are coppersmiths and that they are noisy when hammering. The second assertion, i.e., the target assertion introduces a new metalworker, goldsmiths, and contributes information about their noise level and location. QUD1 asks about the coppersmiths, but it is infelicitous because the second assertion contains no mention of coppersmiths; therefore QUD1 violates the principles of Q-A CONGRUENCE and MAXIMIZE-Q ANAPHORICITY. QUD2 is infelicitous for the same reasons: the second assertion does not mention hammers or any other instruments. QUD3 is answerable by the second assertion, but it is infelicitous based on the principle of MAXIMIZE-Q ANAPHORICITY, as *the goldsmiths* are not present in the question. QUD4 does mention the goldsmiths and is answerable by the assertion. As such, it is the felicitous QUD for the second assertion. Finally, QUD5 and QUD6 both consist of only given content from the answering assertion, but they are not answered by this assertion, violating Q-A CONGRUENCE.

A possible critique of this method could target variations on the QUD. For this particular example, it is plausible that the felicitous QUD is more fine-grained, asking specifically

<sup>17</sup>For an explicitly contrastive sentence, e.g., (31-b), the QUD would be affected. Following authors who assume there is not-at-issue content in contrastive *but* sentences (in particular Toosarvandani 2014 but s.a. Anscombre & Ducrot 1977; Umbach 2005; Jasinskaja & Zeevat 2008, 2009; Jasinskaja 2010), the QUD consequentially would have broader scope, over both conjuncts. For a sentence like (31), the QUD would be *Who was impressed?*, answered positively by the first conjunct and negatively by the second.

about the properties of the subject. We can see whether this is a valid critique by comparing the QUD possibilities for a depictive with those of a locative PP, using QUD4 and QUD5 from Table 7.6. A comparison is being made with a locative component, because postverbal locatives are more common than postverbal adjectives; this was observed in both the synchronic corpus studies in Chapter 3 and the diachronic one in §6.3. The first minimal triple is in (34), with QUD4.

- (34) How can the goldsmiths be described?
- |  |                      |
|--|----------------------|
| a. The goldsmiths sat silent.                    | DEPICTIVE            |
| b. The goldsmiths sat silent in their workshops. | DEPICTIVE & LOCATION |
| c. #The goldsmiths sat in their workshops.       | LOCATION             |

As can be seen in (34), both sentence types in (34-a)–(34-b) with a depictive are felicitous, but the one with only a location in (34) is not. In (35), QUD5 targets the assertion with a location. Not only is the sentence with only a depictive infelicitous, but the version of the location sentence with an additional depictive is, too.

- (35) Where did the goldsmiths sit?
- |   |                      |
|---|----------------------|
| a. #The goldsmiths sat silent.                    | DEPICTIVE            |
| b. #The goldsmiths sat silent in their workshops. | DEPICTIVE & LOCATION |
| c. The goldsmiths sat in their workshops.         | LOCATION             |

It is not unexpected that (35-a), without a location, is incongruous with a QUD asking about location, and that (35-c), with only a location, is congruous. The infelicity of the sentence with a depictive predicate and a locative PP in (35-b) suggests that a depictive is focussed even when another adjunct is present.<sup>18</sup>

In the data from the post-hoc analysis in §7.2.1, more than half of the sitable sentences with postverbal adjectives did not contain a location. This means that the majority of those sentences resemble the (a) sentences from (34)–(35), and the other ones resemble the (b) sentences. The only appropriate QUD for both types of sentences is QUD4, seen in (34), the content of which inquires about the description of the subject.

Following up on the above conclusions, we can zoom out from *sit* and confirm that its unmarked counterpart is the copula.<sup>19</sup> This confirmation is desirable, as it would support the idea that there are two different items directly contrasting with one another, and that speakers would use the marked form when trying Examples using the goldsmith sentences are in (36)–(37), with QUD4 and QUD5 from Table 7.6.

- (36) *QUD reconstruction with the copula and a postverbal adjective*
- |  |
|--|
| a. <b>QUD4:</b> How can the goldsmiths be described? |
|--|

<sup>18</sup>If the sentence contained only a postverbal location, this core adjunct could arguably be in focus instead of the verb. Such cases would be additional candidates for the ambiguous structure needed for reanalysis. Crucially, however, I argue in this thesis that such locative cases are not the only candidates, contra previous accounts such as Kuteva (1999, 2001) and Camilleri & Sadler (2019, 2020).

<sup>19</sup>See §7.1 for data and arguments concerning the semantic contrasts between the copula and *sit*.



- b. **QUD5:** #Where were the goldsmiths?  
 c. **Assertion:** The goldsmiths were silent in their workshops.
- (37) Where were the goldsmiths?
- a. #The goldsmiths were silent. ADJECTIVE  
 b. #The goldsmiths were silent in their workshops. ADJECTIVE & LOCATION  
 c. The goldsmiths were in their workshops. LOCATION

As can be seen in (37)–(36), this copula variant patterns like the *sat* one, suggesting that the copula is a plausible counterpart with similar surface structure to *sit* with sitable subjects. This supports the claims in §7.1, that non-literal *sit* is in competition with the copula in English: non-literal *sit*, reanalysed from literal *sit* with sitable subjects, combines with stage-level-type adjectives, while the copula can combine with either stage-level or individual-level adjectives (s. theory on *sit*'s adjectives in §5.4 and on the semantic contrasts in §7.1.1.)

In this subsection, I used a QUD-reconstruction method from Riester et al. (2018); Brunetti et al. (2021) to gain insight on the information structure of depictives and the most significant predictor of the diachronic corpus study. Depictive predicates often occur with contrastive markers, but they are not contrastive markers themselves. The QUD method shows that, when present, depictives are indeed in the focus of a sentence, and are at least as contrastive as information focus. In the next section, I discuss the current stage of the trajectory, where the new, non-posture-encoding meaning is expanding to nonsitable subjects.

### 7.3 Summary and current stage of English *sit*

The sections up to now have proposed the first two stages of *sit*'s trajectory. To guide the summary of the trajectory, as well as the discussion of the current stage, Table 7.7 summarises the main stages of *sit*'s transition.

TABLE 7.7: The trajectory of English *sit*: a case of recruitment

Stage	Sense	Subject type	Postverbal type
0.	'posture'	sitable	–
I.	'idle' inference	sitable	extended temporal PP
II.	'[AP's property]' + 'idle' inference	sitable	AP
III.	'[XP's property]' + 'idle' inference	nonsitable	LocPP AP

The transition of English *sit* overall comprises a lexical verb, literal *sit*, developing into a copular verb, non-literal *sit*. §7.1.1 contains the proposal that *sit* is undergoing a recruitment transition, and that its contrastive counterpart throughout the transition is *be*. This argument is supported by adjectival data, building on the theory of §5.4. In §7.1.2 I argued that Stage I of Table 7.7, or more precisely the transition from Stage 0 to Stage I, centred on conventionalisation of the 'idle' inference.

This inference was first introduced in §2.3.3, and analysed in Chapter 4; the main synchronic features of this inference are that it is strongly present in non-literal *sit*, but not literal *sit*, and that the inference is not-at-issue. Both of these features support the argument that the inference is crucial to Stage I of *sit*'s trajectory: the original form of the target item combines with an inference in certain contexts, and eventually this inference becomes consistently associated with that item, forming a new meaning. In Stage Ia of *sit*'s path, the inference originates in contexts with extended temporal intervals, producing the “idle human” interpretation, wherein the posture component of literal *sit* is diminished, eventually completely disappearing. In Stage Ib, the new meaning of *sit*, still with sittable subjects, begins to be used in other contexts. I argue that the most important of these generalised contexts contained a postverbal adjective, although postverbal locatives could also have played a role; this argument is based on the statistical results of the diachronic corpus study presented in §6.3. Importantly, this linguistic context, with a postverbal component, provides the ambiguity of surface structure necessary for the transition from Stage I to Stage II, to reanalysis.

In §7.2, I continued to address Stage II of Table 7.7, building on the idea that postverbal adjectives are crucial to the trajectory of *sit* once the ‘idle’ inference is consistently associated with non-posture-encoding interpretations. In §7.2.1, I presented a posthoc analysis of the postverbal adjectives, the results of which are twofold. First, we learned that the majority of the postverbal adjectives appearing with sittable subjects are not posture-encoding, supporting the idea that depictive predicates play a role in the transition to non-posture-encoding *sit*. Secondly, the data for both sittable and nonsittable subjects with postverbal adjectives showed us that the former category more often appears without an additional postverbal location, while the latter patterns the opposite. This supports the idea that reanalysis happened in linguistic contexts containing postverbal adjectives. Following up on the posthoc analysis of §7.2.1, the theoretical proposal of §7.2.2 applied insights from the information structure literature to *sit*. More specifically, I argued that the focus affinity of depictive predicates, being non-fundamental adjuncts, licences a grammatical highlighting in the combination of sittable subjects, *sit*, and a depictive predicate. I claim that not only do posture-encoding *sit* with sittable subjects and non-posture-encoding *sit* with sittable subjects have identical surface structures, but that the highlighting of a depictive predicate, introducing new information to the discourse, encourages language users to reanalyse the structure of *sit*. The new meaning of *sit* is a copular verb, while the old meaning is still associated with the lexical verb structure. These two uses of *sit* are currently still in free variation.

After more and more reanalysis of *sit* with sittable subjects and postverbal adjectives happens, more and more language users have the new form of *sit* in their lexicon. That is, more and more users have non-literal *sit*, a copular verb not encoding posture, in their lexicon. This is where Stage III is possible, a stage which involves the expansion of the new meaning. In the case study, *be going to*, of §6.1.3, sentences exemplifying Stage III are those where no meaning of ‘movement’ is possible. Parallel sentences of *sit* are the non-literal uses which are investigated in Chapters 2–5. As a reminder, this use is quite

productive, being able to combine with subject referents both inanimate and animate, moveable and immovable (s. §4.1). An example with a cup-type subject is in (38).

(38) The espresso cup sat dirty in the sink.

The subject referent in (38) is a cup, which is neither sentient nor does it have an anatomy resembling a human's. Both of those conditions are the necessary ones for literal posture; in other words, an espresso cup is incapable of being in a sitting position. As was shown in the corpus studies, both the synchronic ones in Chapter 3 and the diachronic one in §6.3, other productive non-literal uses of *sit* can be observed in naturally-occurring data. This productivity was further discussed in §4.1, where I demonstrated the full breadth of possibilities for subject referents, including balloon-dog and castle types.

This is evidence that *sit* is currently in Stage III of its diachronic trajectory. The data of the diachronic study, reported in §6.3 suggests that *sit* is still undergoing a change in progress, which is consistent with the free variation of the two uses, literal and non-literal *sit*. Additionally consistent with the change-in-progress claim are the observations that the 'idle' inference, while consistently present with non-literal *sit*, is elusive (s. §4.2, and that certain subject types, such as the whale type of §4.1.2, tends to combine with postverbal adjectives not postverbal locations. If the inference or the subject types were more uniform, it would be less likely that non-literal *sit* is undergoing a change in progress.

As far as the future of English *sit* is concerned, we can speculate that it could stay a copular verb or it could eventually expand to more contexts. In that case, the functional semantic contrast with *be* would possibly resemble the contrasts seen in Spanish with *estar* and *ser* (s. §7.1.1); in terms of Deo (2015a), presented in §6.1.2, this possible future trajectory would comprise the generalisation transition of non-literal *sit* to a form used in a wider variety of contexts. So far, the stage-level nature of copular *sit*, in contrast to the more flexible *be*, is indicative of *sit*'s newcomer status in the functional domain.

The final section of this chapter compares the trajectory of *sit* to the cross-linguistic accounts of posture verbs presented in §6.2. Additionally, this chapter discusses the diachrony of the other two core posture verbs, *stand* and *lie*.

## 7.4 Discussion

In this final section, I discuss the proposed trajectory of English *sit* in comparison to posture verbs in other languages and to the core posture verbs in English. The key features of English *sit*'s transition are that it involves the change of a lexical verb to a copular verb, that non-literal *sit* is semantically contrastive with *be*, that the 'idle' inference is crucial to the onset context of Stage I, and that postverbal adjectives are crucial to the transition to Stage II.

The proposed trajectory of English *sit* resembles the trajectory of Arabic 'sit' (Camilleri & Sadler, 2019, 2020), discussed in §6.2.2, and not that of Bulgarian 'sit' (Kuteva, 1999, 2001), discussed in §6.2.1. That is, the verb form of non-literal *sit*, being a copular

verb, parallels the copular trajectory of Arabic ‘sit’ and not the aspectual auxiliary of the Bulgarian one.<sup>20</sup> The trajectory of Camilleri & Sadler (2019, 2020) is repeated in (39).

- (39)      STAGE I                  II                                  III                  IV  
                  ‘sit’ > ‘stay/remain’<sub>LOC</sub> > ‘be’<sub>LOC</sub> > ‘be’

Besides the fact that Arabic ‘sit’ has developed into a fully expanded copular verb in some dialects, the main difference between my account and the one in Camilleri & Sadler (2019, 2020) is that for them, the postverbal location is the crucial component. For my account of English *sit*, it is the ‘idle’ inference in Stage I and the postverbal adjective in Stage II which are most crucial. In addition, the results of the diachronic corpus study presented here reject their purely locative hypothesis, and my proposal is more concentrated on the diachronic semantics than their syntactic account is.<sup>21</sup> Nonetheless, the insights from this trajectory where *sit* also changes into a copular verb have been helpful in developing the proposal for English *sit*. That is, the account in Camilleri & Sadler (2019, 2020) provides a precedent for analysing non-literal *sit* as a copular verb, which reflects the English data; posture verbs are more commonly reported to develop into aspectual markers, an analysis which would not account for the English data.

In addition to being similar to the Arabic path of development, English *sit* and *be* share semantic contrasts with Spanish *estar* and *ser*. As was noted in the previous section, it is theoretically plausible that *sit* eventually occupies a similar role as *estar* in the future, although this would only occur after many generations. Namely, the copular verb *sit* would need to first expand its uses to the point that it is the default in certain contexts. Then, the uses would need to further expand, such that they encroach on *be*’s uses. See Deo (2021) for an account of a similar development in Marathi.

The other two English posture verbs, *stand* and *lie* do not appear in these diachronic chapters. These two verbs were examined in Chapter 2, where their literal posture was defined and their non-literal features identified, and in Chapter 3, where naturally-occurring data corroborated claims in Chapter 2. In addition, in the discussion of the corpus data, I noted the role of postverbal adjectives with *stand* and *lie*, suggesting already a similarity in the future diachronic trajectory.

Two key differences between the non-literal uses of *sit* and *stand/lie* are also possible reasons for *sit* being the furthest advanced English posture verb of three. that the former encodes no posture and requires a postverbal predicate, while the latter can still encode posture, or orientation, and can appear without such a predicate. Even though *stand* and *lie* appear often with subject referents not meeting the literal posture requirements defined in §2.2, these verbs still contribute meaning about how the entity is oriented; examples with paraphrases are in (40).

<sup>20</sup>In the account of Camilleri & Sadler (2019, 2020), Arabic ‘sit’ has also developed into an aspectual auxiliary, but this development is a separate path than the copular one. As English does not have an auxiliary *sit* form, I do not consider this trajectory further.

<sup>21</sup>An additional difference to both of the accounts in §6.2 is that I do not characterise the aspectual meaning of *sit* as being an essential component. This is because, as is argued in §5.4, the preference for stage-level adjectives is structural and not lexical.

- (40) *Non-literal posture and orientation*
- a. The water bottle is standing on the counter.  
     ↪ ‘It is vertically oriented.’
  - b. The water bottle is lying on the counter.  
     ↪ ‘It is horizontally oriented.’
  - c. The water bottle is sitting on the counter.  
     ↯ ‘It is oriented in a sitting position.’

The orientation information delivered by non-literal *stand* and *lie* in (40) contrasts with the lack of orientation or posture meaning in non-literal *sit*. The subject references of non-literal *sit* cannot be oriented along an axis, suggesting that an intermediary stage similar to that of *stand* and *lie* is not possible for *sit*.

As was shown in §4.1 and noted again in §7.3, non-literal *sit*'s meaning has expanded to the point that it can productively combine with any type of subject referent and not encode a sitting position (s.a. discussion in §4.1). This meaning difference is on top of the structural difference, that it is merely infelicitous to omit postverbal material with *stand* or *lie*, while it is ungrammatical to omit it for *sit*; see §2.3.2, where the data was first introduced. Examples are in (41).

- (41) *Non-literal posture and structural requirements*
- a. The water bottle is standing, not lying.
  - b. ??The water bottle is sitting, not standing.

An important difference amongst the non-literal uses of the verbs is that *stand* and *lie* are used with subject referents which are non-sentient and appropriate-anatomy-less, allowing the postverbal component to be omitted. In contrast, *sit* is used with what I call “nonsittable” subject referents, and never allows postverbal omission. In the diachronic trajectory I propose for *sit*, the non-literal use is only possible for the language users after *sit* has been reanalysed as a copular verb; the reanalysis context comprises sittable subjects and postverbal components, most likely postverbal adjectives. Both the orientation encoding and structural differences between *stand/lie* and *sit* indicate that these non-literal uses cannot be analysed identically in their current stages.<sup>22</sup> That is, if *stand* and *lie* develop into copular verbs like *sit*, they would be reanalysed with different ambiguous surface structures.

Furthermore, in considering the diachronic trajectory of *stand* and *lie*, we cannot forget the observation from Deo (2014, 2015a) that a target item semantically contrasts with another lexical item. This is important, because *sit*, as I argue in §7.1, semantically contrasts with *be* in its current use. When one posture verb already contrasts with *be*, the other posture verbs might be blocked from a similar contrast. Eventually, if or when *sit* generalises to other contexts and then becomes the default in those other contexts, then

<sup>22</sup>In addition, there is so far no strong evidence demonstrating that the ‘idle’ inference plays a role for the trajectory of *stand* and *lie*. It remains unclear what an alternative inference would be for these two verbs.

*stand* or *lie* can move into the contrastive role with *be*. Future work can investigate these possibilities, and eventually also the diachronic path of *stand* and *lie*.

To summarise, this chapter has proposed a diachronic trajectory of the English core posture verb *sit*. This proposal builds both on the synchronic insights established in Chapters 2–5 and the diachronic theory and data in Chapter 6. The development from literal *sit*, a lexical verb which combines with sittable subjects, to non-literal *sit*, a copular verb which combines with any subject including nonsittable ones, includes intermediary stages hinging on the ‘idle’ inference identified in §2.3.3 and postverbal adjectives analysed in §5.4. The synchronic picture of *sit* is that its non-literal use is expanding throughout the language community, as discussed in §7.3. My proposal innovates the insights in previous accounts of posture verbs cross-linguistically, presented in §6.2.1–6.2.2 and of copular verbs, presented in §6.2.3. In addition, I identify the role of an inference in Stage I, presented in §7.1, plus I propose the role of information structure in the transition to Stage II, presented in §7.2. In contrast to many previous accounts in the diachronic literature, my account in this thesis integrates both the structural and dynamic components of the diachronic trajectory of *sit*.

## Chapter 8

# Conclusions

This thesis's main research goal was to provide an account of the English posture verb *sit* from a synchronic and a diachronic perspective. My proposed account of *sit* comprises various components, including a characterisation of the different possible meanings of *sit* and a comparison of this verb to the other core posture verbs, *stand* and *lie*. The two relevant meanings are a literal one and a non-literal one, or a non-figurative and a figurative one, and I analyse each use separately, noting which semantic patterns occur only with one use and those which occur with both uses. I argue that the non-literal use is diachronically connected to the literal one, and motivate this claim based on shared components of the two uses, and corpus data corroborates these observations. A consequence of acknowledging a divide between literal and non-literal uses—a perspective not usually taken in theoretical linguistics—is that I am able to account for important semantic details which might have been otherwise overlooked.

In this study, I also compare the literal and non-literal uses of *sit* to those of *stand* and *lie*. In doing so, my account challenges previous assumptions of these verbs composing a unified class. For example, non-literal uses of English *stand* and *lie* encode orientation of their subjects and have less strict structural requirements; in my account with a diachronic perspective, I claim that *sit* has undergone a more advanced diachronic change than *stand* and *lie* have. While the three core posture verbs as a class share some properties, there are crucial differences amongst the non-literal uses, and these differences underlie my motivation to concentrate on accounting for the complexities of *sit* in this thesis.

The cognitive and typological literature includes accounts of posture verbs in other languages, but in the theoretical literature these verbs have not received much attention. In this dissertation, I reviewed existing proposals and highlighted the uncertainties surrounding the posture verbs. After identifying these gaps, I analysed synchronic and diachronic corpus data, in order to better understand the phenomena.

### 8.1 Concluding summary

The posture verbs, especially in English, are an understudied phenomenon. A point of departure for this thesis was to first delimit and then define literal posture, an undertaking which included laying out my assumptions of indeterminate meaning. I argue in this dissertation that the English posture verbs are ambiguous between two uses, a literal

and a non-literal one. The definition of literal posture that I propose in §2.2 relies on a restriction of the verbs' subject referents. All three verbs require that the subject referent is sentient and has the appropriate anatomy to transition into and to maintain the respective posture. The characterisation of the appropriate anatomy is based on points of support: feet for *stand*, butt for *sit*, and a torso for *lie*; my proposed definitions of literal posture are extensions of cognitive accounts (Newman, 2002; Lemmens, 2014). Innovatively, I point out data with animal referents suggesting that the posture verbs' literal uses require subject referents who can alternate between at least one other posture. That is, although a snake can be described as being in a lying position, it is infelicitous to combine snakes with the posture verb, because this type of animal does not have the appropriate anatomy to be in the alternative positions of sitting or standing.

After a literal posture definition was established, I began characterising the non-literal uses in §2.3. The impression given by previous accounts is that the non-literal uses combine with inanimate subject referents. The synchronic data from the corpus studies in Chapter 3 suggest that for all three verbs a variety of subject types is possible, from abstract to concrete, from immovable to moveable, and naturally-occurring to artefacts. Based on this, I argue that when the subject referent is non-sentient and/or does not have the appropriate anatomy for the respective position, the use of the posture verb is a non-literal one. By including sentient entities without the appropriate anatomy, my account can analyse non-literal uses of, e.g., *lie* with a snake, which contributes the interpretation that that snake is actually sick or dead, not temporarily resting in a lying position.

Most accounts of Germanic posture verbs analyse them as a whole, sometimes pointing out that for *stand* and *lie*, the encoding of orientation persists in the non-literal uses, while for *sit* this is not the case (Serra Borneto, 1996; Lemmens, 2002, i.a.). These descriptive generalisations are found in the cognitive literature, not the formal literature. I show in this dissertation, beginning in Chapter 2, that non-literal *sit* is distinctive beyond just orientation encoding: non-literal *sit* contributes an inference of idleness of the subject referent, where the referent is not productively or actively in use at the reference time. A further distinction amongst the non-literal uses of the three verbs is that non-literal *stand* and *lie* can appear without a postverbal element in some contexts highlighting the orientation, while non-literal *sit* always requires this element; the literal uses can omit the postverbal element more freely. This observation builds on the German account in Maienborn (1990, 1991), although I highlight differences both due to the literal/non-literal divide and differences among the posture verbs.

My proposal additionally deviates from the previous literature on posture verbs, in that I analyse the literal and non-literal uses from a diachronic perspective, explicitly mapping out the diachronic trajectory in Chapter 7. Non-literal *sit*'s increased grammatical dependency, in combination with its more extreme change in meaning, suggests that *sit* has undergone a more advanced diachronic change than *stand* and *lie*. Differences such as these motivate a separate analysis of *sit*. Unless otherwise noted, the remainder of this concluding summary contains its remarks to *sit*, the main object of study.

Across the literal/non-literal divide, I identify a number of properties which persist and



a number which vary; this identification supports a recent generalisation by McNally & Spalek (2022), that in the relation between literal and non-literal uses, eventive properties such as aspect are preserved, while argument structure can change. For one, both the literal and non-literal uses of *sit* are interval statives and both contribute a ‘stationary’ entailment (s.a. Dowty 1979, although he does not address literal vs non-literal uses in an explicit way). Properties which vary are the argument structure and an additional ‘idle’ inference with non-literal *sit*. The argument structure alternation includes the obligatoriness of a postverbal element for the non-literal use, and an omissibility of that element for the literal use, as well as different thematic roles: the non-literal use combines with a theme, while the literal use combines with an agent who is responsible for putting themselves into the sitting position.

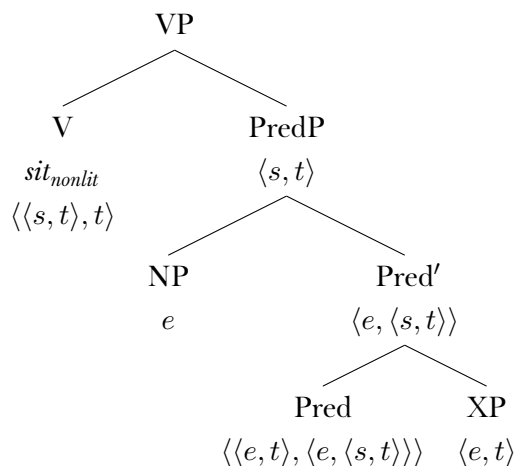
The ‘idle’ inference was mentioned above; some non-literal uses of *sit* had been identified by Newman (2002) as “non-activity” *sit*, although without further elaboration. In this thesis I built upon that observation, demonstrating in Chapter 4 that the ‘idle’ inference is consistently present with non-literal *sit* uses, often without contextual support. There are cases with “idle humans”, shown in §4.1.6, or subject referents with the appropriate sitting anatomy but who are not described to be in a sitting position. For such cases, an extended temporal interval assists in bringing about the ‘idle’ inference; these innovative meanings of literal *sit*, i.e., still lexical verbs (s.a. §7.1.2). The exact nature of this inference is elusive in the synchronic picture, and I argue in this thesis that this is because *sit*’s diachronic path can be characterised as a change-in-progress.

A central argument in this dissertation is that the diachronic change of *sit* comprises a transition from the literal use, a lexical verb, to the non-literal use, a copular verb. This was motivated in Chapter 5. Although some authors have noted the similarity of the non-literal posture verbs to copular verbs (Maienborn, 1991; Levin & Hovav, 1995; Kaufmann, 1995; Rothmayr, 2009), they do not analyse them in such a way. Support for the claim that non-literal *sit* has developed into a copular verb comes from the data showing the subject is a theme and the postverbal element is obligatory. In line with Lohndal (2006), van Gelderen (2015, 2018), and Poortvliet (2018), I assumed a broad definition of the relevant copular verbs in this dissertation: the subject is a theme, the postverbal component is obligatorily present, and the copular verb can contribute additional meaning. This view of copular verbs additionally comprises the theory that variations among copular verbs indicate that they are in different stages of diachronic development (s.a. Devitt 1990). I deviated from this view, in arguing that *stand* and *lie*, whose non-literal uses allow omission of the postverbal element in certain contexts, are not currently copular verbs, although it is possible that this changes in the future.

The synchronic corpus data also provides supporting evidence to the copular-verb claim: English non-literal *sit* does not always combine with a postverbal location, contrary to previous accounts on English and other closely related languages (Maienborn, 1990, 1991; Kaufmann, 1995). More specifically, in the corpus data I observed that postverbal adjectives can appear instead of the postverbal location. I take this as evidence that there is no locative argument slot in non-literal *sit*’s lexicon entry. Rather, the postverbal

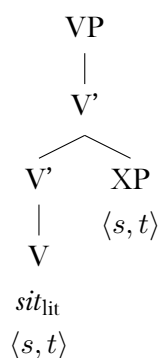
elements are the main predicates of a non-literal *sit* sentence, and they are arguments of a functional Pred head. Following Rothstein (2004), Mikkelsen (2005), Gumiel-Molina et al. (2015), and van Gelderen (2015, 2018), I argued in Chapter 5 for a copular verb structure with a predicational clause. The structure for non-literal *sit* can be seen in (1).

(1) The structure of non-literal *sit*



As can be seen in (1), I assumed that non-literal *sit* is generated at V, and not at Pred (following Adger & Ramchand 2003; Mikkelsen 2005; Gumiel-Molina et al. 2015), which means that PredP is the argument of *sit*. An additional consequence of this structural account is that the subject of *sit* is generated within PredP, and Pred mediates the relation between its complement, a property-denoting expression, and this subject. In contrast, the literal use is realised as a lexical verb. The structure of literal *sit* can be seen in (2).

(2) The structure of literal *sit*



As is shown in (2), literal *sit*, like its non-literal counterpart, is generated at V, but any postverbal material is adjunctive and attaches at V'. For literal *sit*, an eventuality variable is introduced with the verb; in contrast for non-literal *sit*, an eventuality variable is introduced already within PredP. In addition, the postverbal component, optional for literal *sit* and obligatory for non-literal *sit*, is found at different points of the syntax, reflecting the optionality differences. The structures in (1)–(2) demonstrate that while the surface structure can be similar across the two uses, the underlying structure is different.

A new empirical observation of this thesis, presented in §5.4, is that literal *sit* and non-literal *sit* combine with the same type of adjectives, despite the fact that the grammatical

status of that adjective varies across the uses. Namely, postverbal adjectives with literal *sit*, a lexical verb, are depictive predicates, adjunctive in nature; in contrast, postverbal adjectives with non-literal *sit* are the main predicate of the sentence, and this main predicate is obligatory. Regarding the type of adjective, both uses of *sit* tend to combine with adjectives encoding temporary properties. I highlighted these similarities, pointing out that these types of adjectives can be characterised as stage-level predicates, in contrast to individual-level predicates (Milsark, 1974; Carlson, 1977). Gumiel-Molina et al. (2015, 2016) propose an alternative view, wherein adjectival differences in the Spanish copula system are accounted for with comparison classes. The relevant comparison class for adjectives compatible with *sit* is an intensional one, in that the degree of the property encoded by the adjective is evaluated with respect to counterpart stages of the same individual at different world-time indices. In contrast, the irrelevant type of comparison class is an extensional one, comparing the degree of a property with respect to different individuals with that property. Interestingly, the tendency for *sit* to combine with the former comparison class is similar to how the Spanish copula *estar* patterns. These similarities provide support for my claim that *sit* is developing into a copular verb.

Building on the insights from the synchronic picture in Chapters 2–5, I proposed in Chapters 6–7 that the diachronic trajectory of literal *sit* to non-literal *sit* is a case of “recruitment”, i.e., a transition from the lexical to the functional domain (Deo, 2014, 2015a); see the discussion in §6.1.2. Before proposing my own diachronic account, a previous case study of this type of transition was presented in §6.1.3 (Eckardt, 2006), and previous accounts of ‘sit’'s diachronic path cross-linguistically were discussed in §6.2 (Kuteva, 1999, 2001). Then I completed a diachronic corpus study, reported in §6.3, to test the theory that *sit* has undergone, or is undergoing, diachronic change. The main results of the diachronic corpus study are that an increased frequency of non-literal *sit* over the last two centuries does indeed suggest diachronic change, and that while postverbal locations are the most frequent postverbal category, postverbal adjectives were calculated to be the most significant factor in the change. I account for this evidence in Chapter 7, by arguing that depictive predicates with originally literal uses of *sit* comprised the ambiguous context needed for a reanalysis of the lexical verb into a copular verb.

A summary of the recruitment type of diachronic change, based on Eckardt (2006), is that an inference came to be associated with a new meaning of the target item, but only in specific contexts; eventually this inference becomes conventionally associated with the new meaning, and expands to new contexts; next, ambiguous surface structure enables the target item's new meaning to be reanalysed with a new underlying structure; finally, the target item's new form and meaning expands its use (s. §6.1.3). The stages of *sit*'s diachronic trajectory are proposed to be the following. The onset context of the change involved idle-human sentences: subject referents who are sentient and capable of being in a sitting position, in combination with an extended temporal interval, and thus, with the ‘idle’ inference described above. After the ‘idle’ inference expanded beyond these specific temporal contexts, the new meaning began to be used in combination with postverbal adjectives. In line with the literature on depictive predicates (Winkler,

1997/2011; Geuder, 2000; Schultze-Berndt & Himmelmann, 2004; Himmelmann & Schultze-Berndt, 2005a; Heidinger, 2018, i.a.), reviewed in §5.4.1–§5.4.2, I argue that depictive predicates, i.e., postverbal adjectives in combination with lexical verbs, tend to be associated with focus, even when postverbal locations are also present; postverbal locations on their own can also be focussed, suggesting that such cases are also possible candidates for ambiguous reanalysis structures. I propose that the grammatical highlighting of the adjective's content assists in making the sitting position meaning less salient. I analyse that the informational structural effect, in combination with the ambiguity between of *sit* with a postverbal component, as having allowed reanalysis to occur. Following the reanalysis of *sit* for some language users, the new form with its new meaning was used more and more, thereby expanding throughout the community. As I argue in this thesis, non-literal *sit* has not yet expanded its new use completely: for example, some subject types such as the whale-types are less common and need more restrictions than others; in the case of the whale-type subjects, postverbal adjectives are preferred over postverbal locations. Importantly, my diachronic proposal accounts for both the static description of the trajectory's stages and for the pragmatic strategies underlying the transition.

## 8.2 Contributions of the thesis

The findings of this dissertation are relevant to numerous subfields of linguistics, including synchronic lexical semantics and diachronic semantics. In addition, this dissertation builds on insights from the cognitive/typological literature, where posture verbs are much discussed, supplementing these insights with innovative observations and reframing them from a formal perspective. By concentrating on a fine-grained study of one verb, I was able to uncover the complexities of its literal and non-literal uses, and also generate new data concerning this verb and other related verbs. In particular, this research has made the following contributions.

For one, the investigation of the literal and non-literal uses of *sit* has questioned how we regard the literal/non-literal divide. In general, theoretical linguists do not typically address this divide at all, with recent exceptions including Spalek (2014, 2015), Sutton & Filip (2021), and McNally & Spalek (2022). By explicitly analysing the non-literal use as having developed from the literal ones, I was able to characterise semantic patterns in an innovative way. For example, some authors in the formal literature, such as Maienborn (1990, 1991) and Kaufmann (1995), classify posture verbs as locative verbs (s. §2.3), arguing that unless posture is salient, a postverbal location is needed. In this thesis, I approached the phenomenon differently, arguing that the structure of literal *sit* differs from non-literal *sit*, because the latter requires a postverbal component.

I also corroborated my theoretical claims with naturally-occurring data, the results of which showed that postverbal locations with non-literal *sit* can be replaced by postverbal adjectives. Overall, the methodology undertaken in this thesis proved very productive in

investigating an understudied verb. The combination of theoretical claims and empirical evidence from naturally-occurring data underline the strengths of this study.

Zooming out to the non-literal uses of the three posture verbs, I showed that it is not always beneficial to analyse classes uniformly, and argued that differences within verb classes may be due to variable diachronic development. This view of the posture verb class highlights the importance of combining synchronic with diachronic research.

My diachronic account of *sit* challenges previous views on the diachronic change of ‘sit’ cross-linguistically. This and other posture verbs are characterised as often developing into aspectual markers (Kuteva, 1999; Heine, 2003; Hopper & Traugott, 2003; Newman & Rice, 2004); this characterisation includes posture verbs in other Germanic languages such as in Dutch (Lemmens, 2005) and Swedish (Kinn et al., 2018). The research in this dissertation provides data and arguments that English *sit* has developed from a lexical verb to a copular verb, with speculations that *sit* continues on the copular cline. The account of English *sit* supports a recent account of ‘sit’ in Arabic dialects (Camilleri & Sadler, 2019, 2020), discussed in §6.2.2, where it was argued that part of the verb’s development comprises a copular cline. In addition, my diachronic investigation of English *sit* contributes innovative data to the posture literature, in that I demonstrate the importance of postverbal adjectives in the trajectory. As far as I am aware, previous accounts of posture verbs only have alleged the importance of locations, or locative meanings, in the development of posture verbs.

In motivating an account of non-literal *sit* as a copular verb, the research connects the diachronic change of an English verb with other languages’ copular developments. For example, the split copula system in Spanish is known to have its roots in posture verbs (Devitt, 1990; Batllori & Roca, 2012), and there are similar semantic contrasts in the adjectival compatibilities of the two Spanish copulas and in the compatibilities of English non-literal *sit* vs. *be* (s. §7.1.1). While English currently has many copular verbs, it has only one true copula, *be*. This dissertation’s investigation of *sit* provides new perspectives on the future of English with respect to its copular system.

Finally, my diachronic proposal contributes to recent trends in formal approaches to diachronic semantics (Eckardt, 2006; Deo, 2015b), reviewed in §6.1. That is, a target item’s cline is analysed both in terms of the stages’ static descriptions, and also in questioning what underlies the transition between stages. By identifying the crucial inference to the onset context and the information structural effects in the reanalysis stage, the investigation in this thesis supports the consideration of a trajectory’s dynamic elements in addition to the static ones, hopefully opening the door to more research in this direction.

### 8.3 Open issues

As with any study, some questions were raised in this thesis that will need to be addressed in future work. I discuss them in the following.

In the analysis of the synchronic corpus data in Chapter 3, the empirical findings raised a question about the postverbal components. Namely, in the *sit* only study, Corpus Study I in §3.1, 2 of the 120 observations included a postverbal temporal PP instead of a postverbal location or adjective. This combination was observed with abstract subjects only, as can be seen in (3).

- (3) *Temporal PPs with abstract subjects*
- a. After initially denying the killing, Barclay pleaded guilty to manslaughter and was sentenced to 15 to 18 years in prison. His attorney filed a motion to revise the sentence, but the request sat **for nearly eight years** until the sentencing judge acted on it.
  - b. “It’s good that the question sat **for a while**,” said Robert Ellsberg, a former editor of the *Catholic Worker*.<sup>4</sup>

Although extended temporal intervals are important to the conventionalisation of the ‘idle’ inference (s. §7.1), it is surprising that a temporal phrase, clearly not a property-encoding expression, appears in the data. That is, if this temporal phrase also was a property-encoding expression, such as in *The meeting is at 14h.*, it would be possible to analyse it as a copular predicate with non-literal *sit*. As was noted in the discussion in §3.1.4, the overall scarcity of data contributes to the uncertainty of this combination in non-literal *sit*, that it might be an outlier. Future work should investigate this further, possibly with a larger corpus study, in order to know whether these two sentences are outliers or whether there is a further complexity of non-literal *sit* to be analysed.

In addition, the investigation in §4.2 of the inferences contributed by *sit*, revealed that not only is the ‘idle’ inference separate from the ‘stationary’ entailment, but that the ‘idle’ inference does not behave as expected under standard diagnostics. While I motivate its importance as an inference in the diachronic trajectory, especially in the onset context, its function in the synchronic picture is hitherto undetermined. For one, the extent of its distribution with non-literal *sit* needs to be confirmed empirically. This could be done with online surveys and extended contexts pinpoint the inference; we saw in §4.2 that the ‘idle’ inference has an interesting scalar element that could be explored in such an experiment. Secondly, the inference’s meaning type has yet to be identified; diagnosing this could provide further insight on how the inference motivated the diachronic change. More text sources with extended contexts could be studied, in order to better understand the inference and to confirm the proposed pragmatic details of the trajectory.

A third open question concerns an evaluative component which was noted for Corpus Study I in §3.1. This study is a posthoc analysis of the corpus study reported in Fraser (2016, 2018). In the original reporting, I was interested in an evaluative inference that accompanies non-literal *sit*, but decided not to pursue the inference for this thesis. Examples of the evaluation can be seen in (4).

- (4) *An evaluative inference with non-literal sit*
- a. The dishes are sitting in the sink.  
    ↪ ‘The dishes being located in the sink is unwanted.’
  - b. The library book was sitting under the bed for weeks.  
    ↪ ‘The library book being located under the bed is unwanted.’

In both sentences, the suggestion is that the state of the subject referent is somehow undesired. Similar inferences were mentioned for the castle-type subject in §4.1.4, as well as for a potential counterexample to the subject typology in §4.1.6. Considering the new observations made about the ‘idle’ inference for non-literal *sit*, it would be interesting to see to what extent this evaluation is related to the ‘idle’ inference. Future work might be able to tease out the meaning of this evaluation with intricate contexts targeting specific inferences, testing these in a controlled study (see Matthewson & Truckenbrodt 2018 for an example of this approach for modal subtleties).

Finally, the observations and results of this dissertation’s investigation can be extended to *stand* and *lie* in English, as well as their cross-linguistic counterparts. Future research could include corpus work on these other two verbs in English, comparing those results to *sit*’s. One feature that is missing from our current knowledge of non-literal *stand* and *lie* is an inference similar to the ‘idle’ one; according to the diachronic theory appealed to here, it is expected that some inference accompanies each respective transition. It would also be interesting to compare the insights of the literal/non-literal divide for English posture verbs to other languages, whether closely related or more distant. In particular, it would be insightful to identify whether there are many other languages, like Arabic, where ‘sit’ is the furthest developed posture verbs, and whether the trajectory in those cases is always a copular one.





## Appendix A

# Sources

### Chapter 2

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Figure 2.11a <https://twitter.com/EldritchErnie/status/1352071180266700800> [Accessed 27 Jan 2021]; Figure 2.11b <https://twitter.com/PenVogler/status/1353787664957394944> [Accessed 27 Jan 2021]

Figure 2.13 [https://twitter.com/larahayden\\_/status/1354623945715150849](https://twitter.com/larahayden_/status/1354623945715150849) [Accessed 27 Jan 2021]

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## Appendix B

# Summary in Spanish

El principal objetivo de investigación de esta tesis es analizar el verbo de postura del inglés *sit* ('sentarse'). El trabajo aquí desarrollado abarca tanto el comportamiento sincrónico como el diacrónico de los verbos de postura, con especial énfasis en la semántica de *sit*. La descripción que propongo de *sit* comprende numerosos componentes, incluyendo la caracterización de los diferentes significados posibles y la comparación de este verbo con los otros verbos de postura, i.e., *stand* ('estar de pie') y *lie* ('estar tumbado'). En cuanto a lo primero, en esta tesis identifico explícitamente una diferencia entre sentidos (aquí llamados "usos") literales y no literales, o sentidos no figurados y figurados, una perspectiva que no se suele adoptar en los estudios previos de lingüística teórica. En cuanto a lo segundo, además, hago una revisión crítica de las caracterizaciones previas sobre los verbos de postura del inglés, tanto en lo que respecta al comportamiento de *sit* en sí mismo como a las propiedades de *sit* en relación a *stand* y *lie*. Aunque los verbos de postura los ha analizado la literatura cognitiva y tipológica, estos verbos, especialmente los del inglés, se han dejado de lado en la literatura formal. Esta tesis, un estudio en profundidad de un verbo de postura del inglés, es un intento de superar esas limitaciones. Puesto que, de forma general, los verbos de postura no se han estudiado a fondo, dichos verbos presentan una serie de rompecabezas pendientes de resolver. Esta tesis aborda esas numerosas cuestiones examinando propiedades sintácticas, semánticas y de estructura informativa de los verbos de postura. En concreto, la tesis arranca con una caracterización sincrónica del verbo *sit*, seguida de un análisis diacrónico que aborda cómo el sentido literal ha ido paulatinamente dando lugar a un uso no literal. Al igual que el análisis diacrónico enriquece el cuadro sincrónico, el relato sincrónico informa al diacrónico. En lo que queda de este resumen, se describen los fenómenos investigados, las cuestiones centrales y el modo en que la tesis aborda estas cuestiones.

El principal objeto de estudio de este trabajo concierne dos sentidos, o "usos", del verbo *sit*. Los dos usos relevantes son el literal y el no literal, que se corresponden, respectivamente, a un uso transparente (no figurado) y a un uso no transparente (figurado). Las oraciones que ilustran estos usos se presentan en (1), con el verbo en negrita.

(1) *Usos literal y no literal de sit*

- a. Phil **sat** on the floor.  
 Phil se.sentaba en el suelo  
 'Phil se sentaba en el suelo.'

LITERAL

- b. The water bottle **sat** on the floor.  
 DET agua botella se.sentaba en el suelo  
 (lit. ‘La botella de agua se sentaba en el suelo.’)  
 ‘La botella de agua estaba en el suelo.’ NO LITERAL

En ambas oraciones del ejemplo (1), el referente del sujeto no se mueve en su totalidad; es decir, las partes centrales del cuerpo (las nalgas y el torso) de Phil no se mueven del sofá (1-a) y la botella no se mueve del sofá (1-b). En (1-a), el referente del sujeto es un humano que se describe como estando en posición sentada: sus nalgas están en contacto con la superficie horizontal del sofá. Por el contrario, en (1-b), el referente del sujeto es un objeto inanimado, que no se describe como estando en posición sentada –ni siquiera sería posible describir una botella en posición sentada en el mundo real. En esta tesis sostengo que los usos parecidos al de (1-a), con un referente del sujeto que está en posición sentada, son usos “literales”; mientras que aquellos usos como el de (1-b), con un referente del sujeto que no está en posición sentada, son usos “no literales”. Obsérvese que, aunque los ejemplos ilustrativos de (1) contienen un ser humano y una entidad inanimada, la división literal/no literal no está delimitada de este modo: en esta tesis defiendo que hay otros animales con la anatomía adecuada que pueden aparecer en los contextos de uso literal de *sit*, y que se puede predicar el uso no literal de seres dotados de sentidos (en inglés ‘sentient’) siempre y cuando dicha predicación no implique la posición sentada. Volviendo a los verbos de postura en general, *stand* y *lie* también presentan esta distinción. En (2), muestro dos ejemplos, con los verbos de postura en negrita.

(2) *Usos literal y no literal de stand y lie*

- a. Phil **{stood |lay}** on the floor.  
 Phil estaba.de.pie se.tumbaba en el suelo  
 ‘Phil estaba {de pie|tumbado} en el suelo.’ LITERAL
- b. The water bottle **{stood| lay}** on the floor.  
 DET agua botella estaba.de.pie se.tumbaba en el suelo  
 (lit. ‘La botella de agua estaba {de pie|tumbada} en el suelo.’)  
 ‘La botella de agua estaba en el suelo.’ NO LITERAL

Las oraciones de (2) ilustran los usos literales y no literales de *stand* y *lie*. En los usos literales de (2-a) se describe, por un lado, que el referente del sujeto está de pie, es decir, con los pies tocando la superficie horizontal del sofá y el torso más o menos alineado verticalmente y, por el otro, que el referente del sujeto está tumbado, es decir, con el torso tocando la superficie del sofá. Los usos no literales de *stand* y *lie* contrastan con el uso no literal de *sit*, en el sentido que los primeros describen la orientación del referente del sujeto a lo largo de un eje, mientras que los segundos no. Es decir, en (2-b) se describe que la botella de agua está alineada vertical u horizontalmente con respecto al sofá, dependiendo de si se utiliza *stand* o *lie*; en cambio, en la oración con *sit* de (1-b) no hay descripción de la orientación. Esta diferencia en los usos no literales de los verbos de postura sugiere que no se pueden analizar de manera uniforme. Una diferencia adicional entre los usos no literales puede verse en (3); los usos literales de cada verbo se incluyen

a modo de comparación.

(3) *Diferencias estructurales en los usos de los verbos de postura del inglés*

- |    |  |            |
|----|--|------------|
| a. | Phil {sat  stood  lay} (on the floor).<br>Phil se.sentó estaba.de.pie se.tumbaba en el suelo<br>'Phil {se sentaba estaba de pie estaba tumbado} (en el suelo).'  | LITERAL    |
| b. | The water bottle sat *(on the floor).<br>DET agua botella se.sentaba en el suelo<br>(lit. 'La botella de agua se sentaba en el suelo.'   | NO LITERAL |
| c. | The water bottle {stood lay} #(on the floor).<br>DET agua botella estaba.de.pie se.tumbaba en el suelo<br>(lit. 'La botella de agua estaba {de pie tumbada} en el suelo.' )<br>'La botella de agua estaba *(en el suelo).' | NO LITERAL |

Para los usos literales de los tres verbos de postura de (3), se puede omitir la locación postverbal sin que ello afecte a la buena formación de la oración. En la frase con *sit* de (3-b), la omisión de la locación postverbal da lugar a una frase mal formada. Por el contrario, en (3-c), la omisión del mismo componente postverbal da lugar a una oración inaceptable desde el punto de vista pragmático; por ejemplo, es posible omitir el componente postverbal cuando la orientación se destaca en el contexto (p.e. *The bottle was standing, not lying*. 'la botella de agua estaba de pie, no tumbada'). Esta variación en la posibilidad de omitir la locación nos hace pensar que los tres verbos no se pueden analizar uniformemente. Uno de los objetivos de esta tesis es determinar la naturaleza de la división literal/no literal de la clase de verbos de postura; caracterizar esa división lleva consigo delimitar cada uso y proponer una definición de postura literal y no literal. En este trabajo mostraré que la división entre los usos literales y no literales de un verbo de postura puede definirse por las características del referente del sujeto, es decir, si el referente es capaz o no de pasar a la posición de postura correspondiente y luego mantenerla.

Puesto que los tres verbos exhiben las diferencias de comportamiento que acabamos de mostrar, como la presencia frente a la ausencia de orientación y las variaciones estructurales que conciernen a los componentes postverbales, propongo que *sit* está diacrónicamente más avanzado que *stand* y *lie*. La mayor parte de la tesis se concentra en el examen detallado de *sit*, el verbo de postura que más ha progresado desde el punto de vista del cambio lingüístico. Uno de los puntos fuertes de la metodología que se ha empleado en esta tesis es que se concentra en los detalles de los dos usos de un único verbo, trazando de forma más completa su sintaxis y semántica; esto es, se ha optado por el foco en un verbo (*sit*) en lugar de ampliar el abarque empírico y así incluir otros dos verbos que presentan patrones distintos (*stand*, *lay*), lo que habría podido suponer pasar por alto detalles más finos.

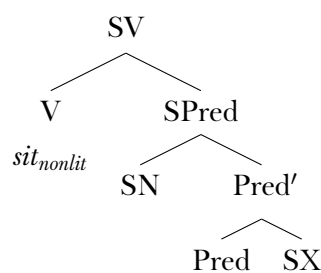
Una propuesta central de la presente tesis es que, sincrónicamente, los usos literales y no literales constituyen cada uno su propia entrada léxica. Más concretamente, definiendo que mientras que el *sit* literal es un verbo léxico, el *sit* no literal es un verbo copulativo.

Para justificar que el *sit* no literal es un verbo copulativo, nos valemos de los datos estructurales de (3-b) en contraste con (3-a), además de la intercambiabilidad del componente postverbal en el caso del *sit* no literal. Basándome los resultados de los estudios de corpus realizados para esta tesis, muestro que *sit* se combina no sólo con locaciones postverbales, sino que también puede aparecer sólo con un adjetivo postverbal, como en (4).

- (4) The water bottle sat \*(empty).  
 DET agua botella se.sentaba vacía  
 (lit. ‘La botella de agua se sentaba vacía.’)  
 ‘La botella de agua estaba \*(vacía).’ NO LITERAL

El adjetivo postverbal en (4) es, análogamente a la locación postverbal en (3-b), obligatorio para la buena formación de la oración. El componente postverbal obligatorio puede ser un adjetivo o una locación, lo que sugiere que no hay un tipo de argumento específico codificado en la entrada léxica de *sit*. Es decir, en esta tesis se cuestiona la caracterización en la literatura formal de *sit* como un verbo locativo, en el que la entrada léxica del verbo incluye un argumento locativo (Maienborn, 1991; Levin & Hovav, 1995; Kaufmann, 1995; Rothmayr, 2009). Proponemos, en cambio, que el *sit* no literal es un verbo copulativo que se fusiona con un SPred (s.a. Rothstein 2004; Mikkelsen 2005; Gumiel-Molina et al. 2015; van Gelderen 2015, 2018), como se ve en (5). El componente postverbal obligatorio, dentro de SPred, es normalmente locativo o adjetival, y se representa con un SX; el sujeto se genera también dentro de SPred, y está representado con un SN en (5).

(5) La estructura de *sit* no literal



En la definición que se asume en este trabajo, los verbos copulativos no están vacíos léxicamente y el propio *sit* no literal aporta significado. Mi propuesta de denotación del *sit* no literal puede verse en (6).

- (6)  $\llbracket sit_{nonlit} \rrbracket = \lambda Q_{\langle s,t \rangle} . \exists e_s [\text{stationary}(e) \wedge Q(e)]$   $\langle \langle s, t \rangle, t \rangle$

En (6), la contribución de SPred, un predicado de eventos, se representa con  $Q$  y la contribución léxica de *sit* se representa con la relación **stationary**, la cual expresa que el referente del sujeto no se mueve. Esta contribución léxica se encuentra tanto en los usos literales como en los no literales de *sit*, tal y como se ha señalado para (1). A diferencia del uso no literal de *sit*, la entrada léxica del uso literal sí codifica la orientación del sujeto.

Esto se muestra en (7); la estructura del uso literal es la estructura esperable de cualquier verbo léxico y, por tanto, no se incluye aquí.

$$(7) \quad \llbracket sit_{lit} \rrbracket = \lambda e_s [\text{**sitting-position**}(e) \wedge \text{**stationary**}(e)] \quad \langle s, t \rangle$$

Además del análisis sincrónico de los usos literales y no literales de *sit*, esta tesis propone un desarrollo diacrónico de este verbo. De hecho, una segunda idea central de esta tesis es que el *sit* no literal se ha desarrollado a partir del *sit* literal. En consonancia con la propuesta según la cual el *sit* no literal se analiza como un verbo copulativo, sostenemos que el *sit* no literal contrasta semánticamente con la cópula *be* ‘ser, estar’. Esto se puede ver claramente al observar qué adjetivos son compatibles con *sit*, en comparación con los que se combinan con *be*; los ejemplos están en (8).

(8) *Contraste semántico del uso no literal de sit y la cópula en inglés*

- a. The water bottle **sits** {vacía| #reciclable}.  
 DET agua botella se.sienta vacía reciclable  
 (lit. ‘La botella de agua se sienta {vacía|reciclable}.’)  
 ‘La botella de agua está {vacía|#reciclable}.’ SÓLO TEMPORAL
- b. The water bottle **is** {empty|recyclable}.  
 DET agua botella está|es vacía reciclable  
 ‘La botella de agua {está vacía| es reciclable}.’ SIN RESTRICCIÓN

En la oración no literal, *sit* en (8-a), sólo se puede atribuir al sujeto una propiedad temporal como ‘empty’. Una propiedad más duradera, como el color de la botella, no es aceptable. Esto contrasta con la cópula *be* en (8-b), que puede combinarse perfectamente con ambos tipos de adjetivos. Este contraste semántico es similar al que se observa en los sistemas con división de cópulas, como el de la lengua española, que contiene tanto *ser* como *estar* (Fernández Leborans, 1999; Arche, 2006; Gumiel-Molina et al., 2015; Arche et al., 2017; Pérez-Jiménez et al., 2018). Nótese que, aunque hay similitudes, en esta tesis defiendo que el *sit* no literal está en un estadio menos avanzado que, por ejemplo, *estar*, en su trayectoria diacrónica. Uno de los objetivos de la investigación de esta tesis es caracterizar la trayectoria diacrónica de *sit* desde su uso literal hasta el no literal. Eso implica no solo una descripción estática de las etapas secuenciales de la trayectoria, sino también un análisis dinámico de las estrategias pragmáticas que subyacen al cambio. A continuación presenta someramente el contenido de los capítulos del trabajo. Esta tesis se divide en dos partes; por un lado, los capítulos 2–5 conforman la propuesta sincrónica y, por el otro, los capítulos 6–7 presentan el análisis diacrónico.

En primer lugar, el **capítulo 2** caracteriza los verbos de postura. En este capítulo se discute la naturaleza del significado indeterminado de los verbos de postura, mostrando que los verbos de postura son ambiguos entre sus usos literales y no literales. Como se ha mostrado en (2)–(3), mientras que *stand* y *lie* tienen usos no literales, estos usos no literales son diferentes a los de *sit*. Interpreto estas diferencias como evidencia de la variación en el desarrollo diacrónico de los distintos verbos, donde los primeros están

menos desarrollados que el segundo. Tras la elaboración sobre el significado indeterminado, defino la postura literal para los tres verbos y hago una revisión de las propuestas actuales sobre los usos de la postura no literal. En esa revisión, señalo las lagunas empíricas y teóricas de la literatura previa y analizo las propiedades eventivas de los verbos de postura.

**El capítulo 3** corrobora las afirmaciones del capítulo 3 con dos estudios de corpus sincrónicos. El primer estudio de corpus examina sólo los verbos de postura no literales y es un análisis posthoc de un estudio de corpus realizado con anterioridad (Fraser, 2016), con las preguntas de investigación reformuladas de manera que se pueda comprobar la hipótesis que planteamos; el segundo estudio de corpus es una continuación de este primero, que examina y compara los usos no literales de los tres verbos de postura. Ambos estudios de corpus investigan la frecuencia del tipo de sujeto, por ejemplo, entidad inanimada permanente en contraste con la entidad inanimada temporal, del componente postverbal, y si hay alguna interacción entre los dos componentes. El segundo estudio de corpus compara además los resultados entre los tres verbos. En ambos estudios se observa que los adjetivos postverbales sustituyen a los locativos postverbales en ocasiones, como en el ejemplo de (4), y que es altamente improbable encontrar un uso no literal sin componente postverbal; además, todos los tipos de sujeto son posibles, pero no parece haber ninguna interacción entre el tipo de sujeto y el componente postverbal. Basándome en los resultados empíricos del capítulo 3 y en las conclusiones teóricas del capítulo 2, argumento que *sit* merece su propia investigación.

**El capítulo 4** es el primer capítulo de la tesis que examina únicamente el verbo *sit*. En este capítulo, se delimitan los diferentes tipos de referentes del sujeto que se combinan con ambos usos de *sit*; esta delimitación se basa en los rasgos de las entidades, y los rasgos se derivan tanto de los resultados empíricos del capítulo 3 como de las conclusiones teóricas del capítulo 2. Además de los tipos de sujetos, el capítulo 4 examina la contribución de *sit* literal y no literal; asimismo, se hace un diagnóstico de las inferencias expresadas por ambos usos de *sit*. Una de las inferencias, que describe la falta de movimiento global desde la locación, se propone como un entañamiento tanto del *sit* literal como del no literal; de hecho, se caracteriza como un componente central de los verbos de postura, y argumento que es una prueba de la conexión diacrónica entre los dos usos. Este entañamiento es visible en las entradas léxicas de (6)–(7). La segunda inferencia, que describe el referente del sujeto como no utilizado activamente, se encuentra a menudo en el *sit* no literal; más concretamente, expresa que el referente del sujeto no está en uso. En el capítulo 7 propongo que esta inferencia desempeña un papel importante en el desarrollo diacrónico del *sit* literal al no literal.

**El capítulo 5** contiene la propuesta sincrónica de *sit* literal y no literal, basada en las ideas de los capítulos 2–4. En este capítulo doy cuenta de las diferencias entre los usos literales y no literales de *sit*, además de explicar las similitudes entre los componentes postverbales. En concreto, asumo que el *sit* literal es un verbo estático dinámico, que puede ir acompañado por adjuntos locativos o adjetivos; propongo que el *sit* no literal es un verbo copulativo que requiere un componente postverbal que suele ser una locación



o un adjetivo. Este componente postverbal se genera dentro de una estructura de SPred, como se mostró en el árbol de (5). Aunque los adjuntos se combinan con el *sit* literal de forma diferente a como lo hacen los predicados con el *sit* no literal, muestro que los componentes postverbales tanto del *sit* literal como del no literal tienen similitudes: ambos tipos de locación son estativas, y ambos tipos de adjetivos codifican propiedades temporales. Estas similitudes, especialmente en los adjetivos que son compatibles con estas estructuras, ponen de relieve una vinculación entre los usos literal y no literal, que sostengo es una prueba del desarrollo diacrónico del verbo *sit*.

**El capítulo 6** revisa críticamente la literatura anterior sobre teoría diacrónica y los análisis diacrónicos de los fenómenos relevantes para el objeto de estudio que nos ocupa, y presenta un estudio de corpus diacrónico. La revisión de la literatura diacrónica proporciona la base sobre la que se construye la propuesta diacrónica del capítulo 7. Los análisis diacrónicos que se analizan en este capítulo constituyen una propuesta ampliamente aceptada para el declive de ‘sit’ (Kuteva, 1999), una propuesta reciente para ‘sit’ en los dialectos árabes (Camilleri & Sadler, 2019, 2020), y una propuesta de otros verbos copulativos en inglés (van Gelderen, 2018). Al discutir estas propuestas, señalo dónde los patrones sincrónicos de *sit*, examinados en los capítulos 2–5, concuerdan con las afirmaciones de estos autores, y dónde los patrones las contradicen. Esta discusión apunta a una laguna teórica, además de empírica, en relación con los verbos de postura del inglés; de ahí la necesidad del estudio diacrónico de corpus del verbo *sit* en inglés. Los resultados principales son que el *sit* no literal ha aumentado en frecuencia durante los últimos doscientos años y que los adjetivos postverbales son un factor significativo en el desarrollo del uso literal al uso no literal.

**El capítulo 7** presenta la propuesta para la transición diacrónica del *sit* literal al *sit* no literal. En este capítulo se aplica la teoría revisada en el capítulo 6, y se aporta una explicación de los resultados del estudio diacrónico de corpus descrito en el capítulo 6. Este análisis diacrónico también tiene en cuenta las ideas sincrónicas de los capítulos 2–5. En particular, propongo que del *sit* literal se ha podido desarrollar un verbo copulativo, realizado como *sit* no literal, y que este verbo copulativo contrasta semánticamente con la cópula *be* (se ve en los ejemplos en (8) arriba). Argumento que la inferencia de ‘falta de uso’, caracterizada en el capítulo 4, juega un papel importante en el contexto de inicio de la trayectoria de *sit*; a continuación, definiendo que la estructura informativa de los adjetivos postverbales es crucial para la etapa intermedia en la que la estructura de *sit* literal, un verbo léxico, se reanaliza como un verbo copulativo, el *sit* no literal. Seguidamente, retomo la descripción sincrónica de *sit*, examinada en los capítulos 2–5 y la vinculo a su trayectoria diacrónica. El capítulo finaliza con una reflexión preliminar sobre la trayectoria diacrónica de *stand* y *lie*.

**El capítulo 8** concluye la tesis resumiendo sus principales aportaciones y describiendo áreas de interés científico que son fruto de la investigación llevada a cabo en este trabajo de tesis. Finalmente, se señalan unas cuantas cuestiones que han quedado abiertas y que se podrían abordar en futuras investigaciones.



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