Disambiguating 'again':
a theoretical and experimental perspective.

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This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except where specifically indicated in the text.

Abstract

Over the past forty years there has been considerable debate over the semantics and pragmatics of the word *again*. In certain contexts – for example *John opened the door again* – it is ambiguous, with both a 'repetitive' reading and a 'restitutive' one. However, no consensus on the meaning of *again* or its disambiguation in context has yet emerged. In this study, I demonstrate how a framework developed by Klein (2001, 2010) may prove a more promising account than the standard 'structural' and 'lexical' views, by using and developing it to analyse how *again* modifies a range of different expressions. I present findings of two experiments using acceptability judgement tasks which address two aspects of *again* for which no empirical data had previously been collected. Findings from the first experiment show that Beck's (2006) pragmatic account, which states that focus stress independently disambiguates *again* in context, is preferable to Jäger & Blutner's (2003) Optimality Theory account, which makes the opposing prediction that *again* sentences can always be disambiguated out of context. Findings from the second experiment indicate that 'intermediate' readings between the restitutive and repetitive ones may sometimes be available. The theoretical and experimental contributions suggest that *again* has an underspecified meaning which is disambiguated through the contribution of its modified expression, word order, focus stress and discourse structure in context.

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1. Introduction

1.1. *Again* again

Over the past forty years, there has been significant debate about the semantics of *again*, sparked by such commonplace sentences as:

(1.1) John opened the door again.

The use of *again* here is, in fact, ambiguous. This is not an ambiguity that the speaker on the street is likely to be aware of, but more than one reading of (1.1) is possible, shown by the fact that it can appear felicitously in two different contexts:

(1.2.a) John opened the door, and then five minutes later he opened it again.
(1.2.b) John closed the door, and then five minutes later he opened it again.

In (1.2.b), there is no requirement that John has opened the door before, merely that the door had been open (which we can infer from the fact that John closed it). Either the whole eventuality of John's act of closing the door (1.2.a) or just the state of the door's being open (1.2.b) can be 'again'. These two readings have most usually been called 'repetitive' and 'restitutive'.[1] As will become clear, assigning two distinct labels is perhaps misleading, but they are useful terms nonetheless, and I will continue to use them as shorthand for these two interpretations.

In this respect, *again* is unique among English iterative adverbs (such as *once more, once again*, *anew*). This raises the questions: what is the meaning of *again*? And how are the different readings disambiguated by hearers and readers? Since Dowty's (1979) treatment, two opposing, yet not internally homogenous, camps have emerged. The first of these 'standard' views can be called 'lexical', and posits that *again* has two distinct meanings, placing the burden for disambiguation firmly within semantics. Its proponents are Fabricius-Hansen (2003), Jäger & Blutner (2003, henceforth J&B) and Kamp & Rossdeutscher (1994). The second maintains that *again* has one, probably underspecified, meaning – a sort of common denominator of all interpretations – with different readings resulting from differing semantic

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[1] These were first introduced in Harweg's (1969) examination of German *wieder* 'again'.

or syntactic scopes[2]. This is the 'structural' view. Von Stechow (1996, 2003), Pittner (2003), Beck (2005b) and Klein (2001) are among its supporters.

1.2 Aims

This study is therefore entitled 'disambiguating *again*' on two counts: firstly, the subject of investigation is *again*, its meaning and disambiguation; secondly, it aims to 'disambiguate' some aspects of the debate on *again*, from a theoretical and experimental perspective. In particular, I aim to:

- show how a model proposed by Klein (1994, 2001, 2010) and developed by Beck (2006) is more promising than the standard views and can be further applied to the analysis of *again*;
- arbitrate between accounts proposing that *again* is disambiguated pragmatically via focus stress (Beck, 2006; Klein, 2001) and those maintaining that focus is part of *again*'s semantics (J&B, 2003; von Stechow 2003), through the addition of experimental data using off-line acceptability judgement tasks;
- find out whether further readings besides the repetitive and restitutive ones – so-called 'intermediate' readings – are available as predicted by some theories (von Stechow, 1996, 2003), again by collecting experimental evidence.

Lang, Maienborn, & Fabricius-Hansen (2003:12) observe: "The repetitive/restitutive duality of ...*again* is the most thoroughly debated example of the syntactic–semantic flexibility that (adverbial) adjuncts show". However, despite the wealth of material on *again*, there seems to be a dearth of experimental data; most evidence is based on the intuitions of individual authors (sometimes leading to different theories based on different intuitions). The only exceptions are corpora studies (Fabricius-Hansen, 2001; Beck, Berezovskaya & Plfugfelder, 2009), and small-scale questionnaires (Beck & Snyder, 2001; Beck, 2005b). This study contributes by introducing an experimental perspective on two aspects of *again* not previously investigated in this way. I also try to bring together a more holistic picture of the disambiguation of *again,* which has emerged over the forty years of debate.

This study is therefore located at the semantics–pragmatics and lexical semantics–syntax interfaces. Although drawing on work within formal semantics (e.g., von Stechow, 1996; Beck 2005b), I will not go into more detail in formal logic than necessary; Klein's approach, while also precise, has a different notation, introduced in Ch.4.

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[2] "The scope of an expression E is the domain within which E's interpretation can impact that of other expressions" (Szabolcsi, 2006:30); what is repeated is in the scope of *again*.

Throughout the study – just as in the literature on *again* (although this is often not admitted) – two perspectives will be taken: those of the speaker and of the hearer. Usually, focus on the meaning of *again* and its place in the syntax is set within the context of production, the speaker's lexicon and grammar, while focus on disambiguation is a matter of comprehension, the hearer's point of view. While it is important to bear this distinction in mind, it is clear that the two go hand in hand: the meaning of *again* contributes to its disambiguation in context; other factors contributing to its disambiguation tell us about what is encoded in the meaning of *again*.

Research has focused on German *wieder* ('again') slightly more than on English *again*, partly because many of its characteristics are more clearly observed in German. For example, scrambling possibilities, whereby elements such as objects move from their underlying position, create more, and more easily identifiable, word-order effects. In general, however, *again* and *wieder* behave very similarly, and so this study draws on work on *wieder*, transferring it to English where appropriate, and translating examples.

1.3. Overview

In Ch.2, I enumerate briefly the main data and the features of *again* which have to be accounted for. The main positions – lexical and structural – are presented in Ch.3, and it is argued that neither of these as they stand is a sufficient explanation. One of the issues to be investigated experimentally emerges from this discussion: the notion of an intermediate reading. Ch.4 introduces the analysis of the encoding of time in language developed by Klein (1994, 2010), its application to *again* (Klein 2001), and Beck's formalisation of Klein's (2001) suggestions about the role of focus stress in *again*'s disambiguation. This provides the stimulus for the other aspect investigated experimentally: whether *again*'s focus stress is a matter of semantics or pragmatics. In this chapter I also extend the Kleinian analysis of *again* to new data, showing that it is a promising avenue for accounting for *again*, but also raising some questions – so this chapter constitutes the main theoretical contribution. Ch.5 outlines the first experiment, looking at the contribution of focus in the disambiguation of *again*; Ch.6 presents the second experiment concerning the availability of 'intermediate' readings. In Ch.7, I conclude, based on the theoretical analysis of Ch.4 and empirical findings of Ch.5 and Ch.6, that a holistic account of *again* is most likely to include an underspecified meaning and a pragmatic account of disambiguation that involves the nature of modified expressions, word order, focus stress and discourse context.

2. *Again***'s characteristics**

2.1. Categorising *again*

Again has been variously referred to as an adverb, adjunct, modifier, additive particle, focus particle, discourse particle and assertion-related particle. Terminology largely depends on theoretical perspective, but the array indicates its puzzling characteristics. It also highlights *again*'s similarity to other items. For example, it may be likened to other adverbs which may appear in different positions or have different readings (Austin, Engelberg & Rauh, 2004), e.g.:

(2.1) Ben (quickly) left the room (quickly)
 > Ben left the room walking quickly
> Ben left the room soon afterwards / in a short time.

'Additive particle' likens *again* to *too* and *still*, which also introduce a presupposition. 'Focus particle' makes it comparable to items like *always* whose interpretation is affected by the placement of focus. 'Discourse particle', however, tends to refer to usages such as (2.2).

(2.2) What did you say his name was again?

This is a fairly recent development and seems to represent an instance of grammaticalisation (Pittner, 2009), and is outside the scope of this thesis.

While the vast amount of work on *again* may suggest a special, or even unique, status, its characteristics are observed to varying degrees in other elements too. Any account of *again*, then, should fit within these wider patterns. As this thesis addresses a number of approaches to *again*, I will use the broad and sweeping, hopefully fairly neutral, terms 'adverb' and 'particle', as appropriate for the particular aspect under consideration.

2.2. *Again***'s characteristics**

In this section I present the main *again* data found in the literature (e.g., Beck, 2005b; Fabricius-Hansen, 2001; Klein, 2001; Pittner, 2003; von Stechow, 1996), by setting out four of its important characteristics: ambiguity, presuppositionality, word-order sensitivity and focus sensitivity.

2.2.1. *Again* is ambiguous

The starting point for the debate on *again* was the observation that telic predicates are sometimes ambiguous with *again*. Telic predicates have inherent endpoints – achievements and accomplishments in Vendler's (1957) terms. Those demonstrating this ambiguity have some sort of visible result state and are reversible:

> It is the final state which can be isolated, and can act as the scope of *again*. Such verbs may be termed 'reversible', since, although they may not, in fact, possess a reversive partner, they potentially do. (Cruse, 1986:229)

Thus, besides the infamous *open/close* pair with its two readings (2.3), there are many others besides, e.g. *lock/unlock*, *damage/repair,* and *lose/find* (> indicates the reading).

(2.3) Bob opened the window again.

> Bob opened the window, and he had opened it before. (repetitive)

> Bob opened the window, and it had been open before. (restitutive)

However, the ambiguity is not limited to telic verbs. Fabricius-Hansen (2001) uses the term 'counterdirectional' for the effect of *again* with verbs such as *fall/rise, come/go, narrow/widen.* These are arguably atelic because they occur most naturally with *for X time* rather than *in X time* – a standard, if not uncontroversial, test of telicity: #*The road widened in 2 metres*.

(2.4) The shares fell again.

> The shares fell, and they had fallen before.

> The shares fell, and they had risen before.

An additional layer of ambiguity is added whenever there is an indefinite object or subject:

(2.5) Bill opened a window again.

> Bill opened a window, and he had opened that same window before.

>   …and he had opened a different window before.

>   …and the same window had been open before.

>   …and a different window had been open before.

A window may be specific or non-specific, i.e., the same or different in each instance of opening (or being open). This phenomenon is particularly salient in German, where word order determines specificity*,* and so is a useful diagnostic. In English, it is not so central to the

discussion because word order possibilities are more limited and the non-specific reading seems always to be available.

2.2.2 *Again* is presuppositional

A sentence with *again* not only asserts something about the time that the utterance is about, but also presupposes that something happened before. *Again* is a presupposition trigger: the presupposition is part of its lexical meaning.

(2.6) Bob opened the door again.
>> Bob had opened the door before.

The remainder of the utterance without *again* (*Bob opened the door*) is asserted; the addition of *again* triggers a presupposition (indicated by >>). There are two parts to this presupposition: "The first encodes the presupposed eventuality, the second the requirement of temporal anteriority" (van der Sandt & Huitink, 2003:183). Although the precise formulation and relation of these two parts varies from account to account (see Ch.3), it does seem that this much at least is agreed upon.[3]

The predominant view on presuppositions in work on *again*, and therefore in this study, is in the tradition of Stalnaker (1973) – namely, that a presupposition is an admittance condition for the felicitous utterance of a sentence. Only when the presupposition is satisfied is the utterance defined, and only then can the truth-conditional meaning of the sentence be ascertained. When the presupposition is not met in the discourse or the common ground, it must be accommodated, i.e. the hearer must assume it and add it to the discourse context. This "dynamic process of 'repair'" is constrained by the propositions of the utterances in context as well as real-world knowledge (Huang, 2007:86).

2.2.3. *Again* is word-order sensitive

Different readings are available when *again* appears in different syntactic positions. Of (2.7.a–c), only the third, where *again* appears in sentence-final position, allows for the repetitive/restitutive ambiguity; the first two can only be repetitive.

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[3] Klein (to appear) calls *wieder* an 'assertion particle', suggesting that it makes two assertions: the actual proposition asserted in the particle-containing sentence and a secondary assertion, compatible with the first and temporally preceding it. Thinking only in terms of assertions about topic times does avoid the difficulties of presuppositions, but, given that the literature is otherwise agreed on *again*'s presuppositionality, this is assumed here.

(2.7.a) Again, John opened the door.

(2.7.b) John again opened the door.

(2.7.c) John opened the door again.

Beck & Johnson (2004) establish that this is a robust pattern in English[4].

2.2.4. *Again* is focus sensitive

"An expression is focus sensitive if its interpretation is dependent on the placement of focus" (Beaver & Clark, 2003:323). Focus is commonly viewed as a pragmatic notion closely tied to information structure: focused material includes new or pertinent information, while backgrounded material is maintained from preceding utterances. One prominent theory of focus is Rooth's (1992) Alternative Semantics, which is the framework used in this study. It is encapsulated informally by Krifka (2007:18): "focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions". Thus, the focused subject in (2.8.a) (indicated by the capitalised text)[5] suggests the alternatives in (2.8.b) and would be an appropriate answer to question (2.8.c).

(2.8.a) BOB bought Linda flowers.

(2.8.b) TERRY bought Linda flowers; NIGEL bought Linda flowers;…

(2.8.c) Who bought Linda flowers?

Note that the alternatives "have to be of the same type, and often also of the same ontological sort (e.g., persons or times), and they can be more narrowly restricted by the context of utterance" (Krifka, 2007:20).

In English, focus is normally marked by a nuclear pitch accent on the stressed syllable of the focused element, which "may be defined as a local feature of a pitch contour – usually but not

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[4] More possibilities are possible given more complex syntax, but shall not be considered here, e.g.:

> [we] have to pick up the pieces and begin <u>again</u> the struggle to live our lives with dignity. (BNC, [Independent, elect. edn. of 19891005])

[5] In this study I capitalise the whole word bearing focus stress, but focus may project, affecting more than one word. This is never the case when *again* is focussed, but often the case when the predicate is. For example, in the following case, not just *piano* but the whole predicate *play the piano* is focus-marked, as it has an alternative set which includes *read a book*.

Doris played the piano, then she read a book, and then she played the PIANO again.

Whether the causes of and constraints on focus projection are syntactic (Chomsky & Halle's, 1968, Nuclear Stress Rule) or semantic and pragmatic (Beaver & Clark, 2008) is debated. For the purposes of this study, it can be assumed that focus is clear from the alternative sets possible in the context.

invariably a *pitch change…* – which signals that the syllable with which it is associated is *prominent* in the utterance" (Ladd, 2008:48). Nuclear pitch accent and stress are separate, and both are distinct from the pragmatic notion of focus (which can also be marked in other ways), but I shall often refer to a 'focused predicate', 'focused *again*' or 'focus stress' as shorthand for 'bearing a nuclear pitch accent as a function of pragmatic information'.

Focus affects *again*'s readings:

(2.9.a) Bob OPENED the window again.
(2.9.b) Bob opened the window AGAIN.

When heard out of the blue, the first favours a restitutive reading and the second a repetitive, and even in context, it seems focused *again* must have a repetitive reading:

(2.10) Bob closed the window and then he opened it AGAIN.

With atelic verbs, focus stress has an even more interesting effect. Klein (2001) points out that it is not just counterdirectional verbs which have more than one reading, but also stative verbs.

(2.11.a) The next autumn, they were on the AXALP again.
(2.11.a) The next autumn, they were on the Axalp AGAIN.
(Klein, 2001:273; my translation)

In the first, the presupposition is that they were on the Axalp at some time before, but not the previous autumn, whereas in the second they were on the Axalp two autumns in a row, as demonstrated by the felicitous contexts in (2.12.a, 2.12.b), which cannot be exchanged.

(2.12.a) In autumn 1980, they were in Riva Faraldi. The next autumn, they were on the AXALP again.
(2.12.b) In autumn 1980, they were on the Axalp. The next autumn, they were on the Axalp AGAIN.
(Klein, 2001:274; my translation)

From both it can also be inferred that they were at some other place immediately preceding the time period specified by *the next autumn*.

The effect of focus is key in the evaluation of the 'standard' views (Ch.3) and adoption of Beck's (2006) and Klein's (2001) analysis (Ch.4), and forms the basis of the first experiment (Ch.5).

2.2.4.1. Of presidents and primes

Klein also observes that it is possible to use *again* even with states that have no contrasting state, but rather hold for all time, and the same effects of focus stress are observed here too:

(2.13.a) 17 is a prime number, 18 is not a prime number, 19 is a PRIME NUMBER again.
(2.13.b) 16 is not a prime number, 19 is a prime number, 23 is a prime number AGAIN.

(Klein, 2001:276; my translation)

Such cases are limited to the particular discourse situation of giving a list, as in (2.13). *Again* is operating at the discourse level – what is 'again' is the mention of a fact, rather than the fact itself.

3. Two approaches to *again*

Having looked at the range of data that any theory of *again* must account for, I now turn to outline and evaluate representative proposals from the 'lexical' and 'structural' views. I demonstrate that each accounts for the ambiguity, presuppositionality, and word-order sensitivity of *again* to some extent, but that the models either cannot account for all the data, or overgenerate, or both, and they do not satisfactorily explain the effects of focus. The evaluation draws partly on the discussions in Féry & Sternefeld (2001) and Lang et al. (2003).

3.1. The lexical view

Given the two readings of *again*, one possibility is that it has two meanings. The main proponents of this view are J&B (2003) and Fabricius-Hansen (2001), along with Kamp & Rossdeutscher (1994). Here, I discuss Fabricius-Hansen's (2001) proposals for polysemy; in Ch.4.6, I consider J&B's (2003) suggestion lexical ambiguity in more detail.

Fabricius-Hansen's starting point is the counterdirectional reading available with verbs such as *fall/rise* and *come/go* (see section 2.2.3), for which the restitutive reading seems to presuppose the existence of a previous counterdirectional eventuality:

(3.1) The road widened, and then it narrowed again.

Thus, Fabricius-Hansen proposes that counterdirectional *wieder* (and equally *again*) has the following meaning (where the presupposition follows /):

> WIEDER(P)(e) := P(e) / e' : P_c(e') & e' < e & res_{pc}(e') = pre_p(e)
> where P and P_c are properties characterising (causative) counterdirectional transition events, $res(e_p)$ and $pre(e_p)$ the two successive states which have to obtain in order for P(e) to hold, and < the relation of complete precedence between times/eventualities. (Fabricius-Hansen, 2001:110).

Note that this also captures the restitutive reading of telic verbs:

(3.2) John closed the door again.

Here restitutive *again* contributes the presupposition that there was a property of another event before (an opening) whose result state (being open) matches the starting state of the asserted event (a closing). Repetitive *again*, meanwhile, is defined as:

WIEDER(Q)(e*) := Q(e*) / e*': Q(e*') & e*' < e*

where e*, e*' are "non-basic" eventualities, time spans, or situations, and Q a property of an appropriate type. (Fabricius-Hansen, 2001:112)

Repetitive *again* adds the presupposition that another event had had the same property before: there was previously a closing of the door by John.

The two readings of (3.2) presuppose something about different time periods before the asserted eventuality. The restitutive reading tells us something about the state of the door immediately beforehand and the action which resulted in that state; the repetitive reading tells us about an action which happened at some time before, with an inferred intermediate action and state which is not part of the presupposition – a door must have been opened to be closed again. Proposing two meanings therefore accounts for the difference in relevant

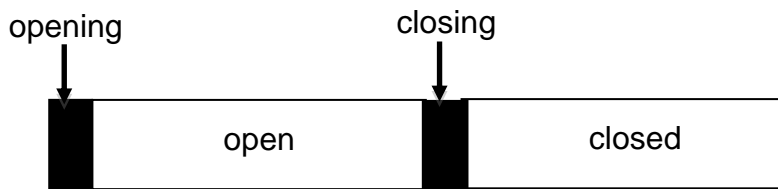**Fig. 3.1.** Restitutive *again* (Cf. Fabricius-Hansen, 2001:109)
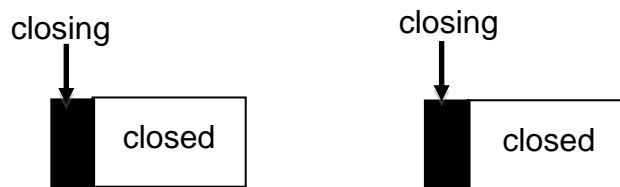

Fig.3.2. Repetitive *again* (Cf. Fabricius-Hasen, 2001:113)

presuppositional time periods (see Fig.3.1. and Fig.3.2.), as well as the ambiguity of *again,* within its semantics.

3.1.2. Advantages

This approach contributes much to the understanding of *again*. Firstly, Fabricius-Hansen demonstrates the range of *again*'s interpretations and the interaction of its two meanings with different types of modified expression. The restitutive reading is a 'prototype', "instantiating all possible aspects of the semantic contribution of *wieder* which are found more or less reduced or isolated in other contexts" (Fabricius-Hansen, 2001:121), e.g. only a repetitive reading is possible with expressions such as *sneeze*. These are set out in a semantic map (see Fig.3.3.) showing how the interpretations are 'naturally' related as a "multistep chaining of association" (Jackendoff, 2002:340). Secondly, it can concord with Pittner's (2003) identification of repetitive *wieder* as an 'event adjunct' with scope over the base positions of all arguments, and restitutive *again* as a 'process adjunct' scoping minimally over the verb, which accounts for the correlation between word order and reading of *again*. Thirdly, it includes the notion of contrast in the meaning of *again*: "the common denominator of so-called restitutive and repetitive *wieder* is …. 'something similar and something different before'" (2001:122). Fourthly, the proposal of two meanings of *again* would fit with the lexicalisation of the two readings in some languages, e.g. Navajo (Wälchli, 2006:75).

counterdirectional-restitutive
➤ transition event: *open*

counterdirectional
➤ transition process: *rise/fall*

restitutive
➤ state: *be* + locative
➤ non-transitional process: *write*
➤ non-transitional event: *sneeze*

purely repetitive
➤ time, situation: *open*
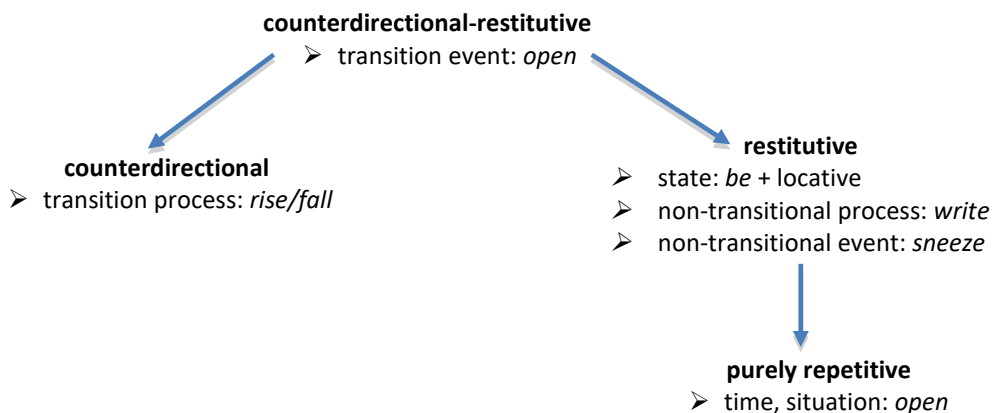
Fig.3.3. The *again* 'family' (adapted from Fabricius-Hansen, 2001:122)

Furthermore, some criticism of Fabricius-Hansen (2001) is possibly invalid. Beck (2005b) argues forcefully against the lexical view on the basis of the cross-linguistic distribution of the two readings of *again*. He establishes that in some languages (e.g., English, German), 'complex predicates' (such as motion verb + goal prepositional phrase constructions, e.g. *walk to the village*) are like accomplishments, whereas in others (e.g., Hebrew, Spanish) they are like activities. As purely restitutive *again* occurs only with telic predicates, it is expected with complex predicates only in languages in which they pattern as accomplishments. Beck's

survey confirms this prediction. In those languages where complex predicates are like activities, restitutive *again* may, however, still modify lexical accomplishments (e.g. *open*). Beck concludes that lexical approaches cannot account for this fine-grained differentiation: they would predict that there is always or never the possibility of restitution in a language, "since everything hinges on whether or not the language has counterdirectional *again*"; "there are no conceptual reasons that would prevent a restitutive/counterdirectional reading from being available" with complex predicates (Beck, 2005b:43). However, it is clear that in Fabricius-Hansen's model, *again*'s interpretation is linked to "the specific character of the modified entity" (Fabricius-Hansen, 2001:121). This is not surprising, given that there are always constraints on what adverbs modify: for example, manner adverbials may only modify transitive verbs with an affected object (Adger & Tsoulas, 2004). As restitutive *again* can apply only to verbal constructions which have a contrasting process or state, it seems reasonable that in languages in which *walk to the village* has the same activity flavour as *walk with a limp* does in English, restitutive *again* is unable to modify complex predicates, but may still modify lexical accomplishments. So, I think, Fabricius-Hansen's lexical approach could make the correct predictions here, after all.

3.1.3. Shortcomings

However, there are at least three ways in which this lexical approach is not wholly satisfactory, related to the notions of basicness, sloppy identity and focus.

Whereas in the structural approach the repetitive meaning is basic as the only and most reduced meaning, in the lexical approach the restitutive reading is basic, as from it all other readings may be derived or abstracted. This reflects the likely diachronic development of both *wieder* and *again*:

> an adverse meaning 'against' and a meaning 'contrary to' developed as well as a counterdirectional meaning ('back', 'backwards'). This was the basis for the development of the restitutive meaning and, later on, for the development of the repetitive meaning. (Pittner, 2003:384–385)

For Fabricius-Hansen, the synchronic model mirrors diachronic development: "Since the purely repetitive variety is more abstract than the 'restitutive' varieties and gives rise to interpretations with gaps in the chain of events, it should take more for a genuinely repetitive adverb/particle to develop 'restitutive'… varieties than the other way round" (2001:128).

However, while restitution may have been 'basic' historically, Pittner argues that there has been a shift towards repetition as the sole meaning, "as the effect of a loosening of selectional restrictions because repetitive *wieder* can occur with any type of eventuality" (2003:385). This is affirmed by Beck et al.'s (2009) corpus study comparing usage of *again* in nineteenth century and present-day English: they observe a decline in use and a restriction of modification of lexical accomplishment predicates by restitutive *again*. This is also problematic for Fabricius-Hansen's view that a repetitive reading is the last resort in disambiguation – it has to have a specific reason, such as the nature of the predicate or focused *wieder* – whereas restitutive *again* is the default case: "if *wieder* can have a restitutive(-like) interpretation, it should" (2001:123).

Secondly, I suggest that Fabricius-Hansen's model undergenerates possible readings when sloppy identity of indefinite objects are considered. The definition of repetitive *again* contains a property of a 'non-basic eventuality' (e*), which allows for the fact that it may not be exactly the same event that is repeated. For example, in (3.3) the flat may be the same or different in the asserted and presupposed eventualities:

(3.3) Becca bought a flat in Cambridge again.

The definition of restitutive *again,* on the other hand, only contains a basic eventuality 'e', establishing a correspondence between restitution and specificity. Consider, however, the following scenario:

(3.4) All the windows had been closed when they came into the room. But as the room filled up with students it got increasingly stuffy, so Ben opened a window again.

Here *again* is restitutive and non-specific – the object may have different referents in the assertion and the presupposition. Fabricius-Hansen's (2001) definition would not permit such a reading; a less constrained definition is necessary.

Thirdly, Fabricius-Hansen (2001) maintains that "it is the focus accent in addition to the type of predicate modified by *wieder* which determines whether *wieder* can be given a counterdirectional-restitutive(-like) interpretation or not" (2001:123); that focused *wieder* goes with the repetitive reading; and that focus is linked to discourse structure. These are important observations, but a theory of how focus may interact with *again* is not fully worked out. For

an explanation of focus' role in disambiguation of *again*, I turn to Beck's (2006) account in Ch.4.

3.2. The structural approach

In contrast to the lexical view, the structural one, represented here by von Stechow (1996, 2003), proposes a single meaning for *again*, amounting to repetition:

> Let P be a property of eventualities and let e be an eventuality ‖**again**‖(P)(e) is defined only if   e' [‖MAX‖(P)(e') = 1 & e' < e.
>
> Where defined, ‖**again**‖(P)(e) = 1 iff P(e) =1.

> "The definition presupposes that P is a property of eventualities. < is the relation of temporal precedence. It is true of any two eventualities if the first is temporally located entirely before the second. MAX(P)(e') means that e' is a maximal P-event." (von Stechow, 1996:12)

In another words, *again* always presupposes that there has been an eventuality with the same property before. Different readings result from different syntactic scopes of *again*, which requires the decomposition of some verbs, such as telic change-of-state verbs. Indeed, the development of the structural analysis of *again* has gone hand in hand with that of decompositional semantics, stemming from the work of McCawley (1973) and Dowty (1979). For example, a sentence (3.5) can be thought of as an act of Rupert's which causes the door to be in a state of being open.

(3.5) Rupert opened the door again.

Thus *open* can be 'decomposed', with the help of operators such as CAUSE and BECOME:[6]

> *x open y*
>
> λyλx.ACT(x) CAUSE BECOME(open(y))
>
> (von Stechow, 2003:418)

---

[6] Informally, these have the following semantics:

"[[BECOME]] (P)(e) = 1 iff e is the smallest event such that P is not true of the prestate of e but P is true of the result state of e.

[[CAUSE]] (e')(e) = 1 iff e' occurred, e occurred, and if e hadn't occurred then e' wouldn't have occurred." (Beck et al., 2009:197)

Such a structure then has more than one attachment site for *again*: when the whole eventuality is in the scope of *again*, a repetitive reading is obtained; when only the result state is in its scope, there is a restitutive reading.

$\lambda y\lambda x.(\text{ACT}(x) \text{ CAUSE BECOME}(\text{open}(y)))$**again**   (repetitive)

$\lambda y\lambda x.\text{ACT}(x) \text{ CAUSE BECOME}(\text{open}(y)$**again**$)$ (restitutive)

(cf. von Stechow, 2003:418; changed to reflect English word order)

For von Stechow, decomposition is actually reflected in the syntax[7]. Even if the surface linear word order is no different, at this level (which von Stechow would call Logical Form) there *is* a difference. Ambiguity therefore arises for the hearer who has no access to the underlying structure, although disambiguation is not particularly considered by von Stechow.

Von Stechow (1996) also applies decomposition to the counterdirectionals identified by Fabricius-Hansen (2001). For example, by decomposing *fall* as [BECOME[MORE[low]]], two sites for *again* are once more available, and therefore two readings:

The barometer fell again.
the barometer$(\lambda x.[\text{BECOME}(\lambda s[\text{MORE}[\lambda d.d\text{-low}_s(x), \lambda d.d\text{-low}_{beg(e)}(x)]])](e)$**again**$)$
(repetitive)

the barometer$(\lambda x.\text{BECOME}[(\lambda s[\text{MORE}[\lambda d.d\text{-low}_s(x), \lambda d.d\text{-low}_{beg(e)}(x)]])$ **again**$](e))$
(restitutive)
(cf. von Stechow, 1996:47,45)[8]

Here the MORE operator captures the process nature of *fall*: at any point the barometer is lower than the moment before. Note that the distinction in what is presupposed in the abutting time period is not captured here though – whether the barometer fell or rose immediately before the asserted eventuality "has no theoretical significance" (von Stechow, 1996:47); rather it has to fall out of pragmatics.

---

[7] Here logical form is given; for syntactic structure of (3.8) and (Fig.3.4), see Appendix V.
[8] Where beg(e) is the beginning of the event, s is a state, and d is the degree.

This account assumes a rather powerful characteristic of *again*, which Rapp & von Stechow (2000) termed the 'Visibility Parameter': functional adverbs may attach at any point in the syntax, even within a verbs' decomposed elements, thus 'seeing' inside the verb. *Again* is almost unique in this respect. The only other candidate so far for 'decomposition-adverb' status is *almost* (but, interestingly, not its German counterpart *fast* (Rapp & von Stechow, 2000)).

3.2.1. Advantages and problems

This purely structural approach captures the distinction between 'repetitive' and 'restitutive' readings of *again* with only one meaning and through general scope principles. It is also able to account for variation in speakers' use of *again*: any verbal construction not manifesting an ambiguity has no decomposable structure. However, it is not comprehensive on four counts: ignorance of focus; possible overgeneration of intermediate readings; an existential presupposition; and problems with the decompositional approach itself.

Firstly, von Stechow (1996) ignores the effect of focus stress entirely; von Stechow (2003) suggests that J&B's (2003) bidirectional Optimality Theory model could be appended. However, that predicts that a focused predicate always results in a restitutive reading, whatever the context, which does not seem to be the case, e.g.:

(3.6) Recently shares have been up and down.
     How are they today?
     They FELL again.
     (Cf. Pittner, 2003:383)

Here focused *fell* could contrast with an immediately preceding rising or with the alternative that they could have been rising (given their volatility). Omission of focus stress means that the different interpretations available with states cannot be addressed, because such verbs cannot be decomposed with a BECOME operator. This failure to consider focus is clearly linked to the concentration on syntax in isolated sentences, ignoring discourse context.

Secondly, J&B criticise von Stechow's theory on account of overgeneration. Decomposition of verbs into [CAUSE[BECOME]] provides an attachment site for *again* between CAUSE and BECOME, too:

λyλx.ACT(x) CAUSE (BECOME(open(y))**again**)

This would be possible for (3.7), barring a restitutive reading.

(3.7) The window opened by itself. Mary closed it. John opened the window again.

However, J&B (2003) claim that such a reading is impossible. Von Stechow concedes that given that a restitutive reading is always possible in such a situation, "it is hard to tell whether the intermediate scope reading is real" (1996:16), but maintains that it is hard to deny entirely. He also identifies a possible ambiguity with unergatives, such as *sing,* which cannot be decomposed into [CAUSE[BECOME]], but which are decomposed as 'agent + singing', for instance. *Again* may then scope over the agent or 'singing'.

(3.8) Mary is singing again.

(λe.agent(Mary)(e) & singing(e))(e)**again**

agent(Mary)(e) & ((singing)(e)**again**)

(cf. von Stechow, 1996:24)

Von Stechow suggests that the second reading could perhaps be used when no one has sung "for a longer period of time", so Mary "'restituted' the activity… in some sense. The matter needs more investigation, and I will leave the question of whether this reading exists open" (1996:24).

This, however, entails that for verbs which *do* decompose into [CAUSE[BECOME]], there may be three 'non-repetitive' readings of *again,* with scope over the result state, [BECOME] or [CAUSE[BECOME]]. Thus, I suggest, there are, in principle, *four* readings (Fig.3.4.).

Reading	Structure	Example
repetitive: scope over whole eventuality	λyλx.(ACT(x) CAUSE BECOME(open(y)))**again**	Fritz opened the window, then he shut it, and then he opened it AGAIN.
intermediate 1: scope over caused opening	λyλx.ACT(x) (CAUSE BECOME(open(y))**again**)	Hans opened the window, then Clara shut it, then Fritz opened the window again.
intermediate 2: scope over opening	λyλx.ACT(x) CAUSE (BECOME(open(y))**again**)	Fritz opened the window, then Clara shut it, then the window opened again.
restitutive: scope over result state	λyλx.ACT(x) CAUSE BECOME(open(y)**again**)	Fritz shut the window, then he OPENED it again.

Fig.3.4. Table of four possible readings within von Stechow's (1996, 2003) syntactic decompositional approach to the analysis of *again*.

Of course, the problem with trying to ascertain whether such readings exist is that each reading entails the one below it – though naturally, not with different subjects in the *again* sentence and its antecedent, used here in (c) and (d) to highlight the differences. This problem is the subject of the second experiment, and will be taken up again in Ch.4.5.

Thirdly, von Stechow's definition of *again* involves the presupposition of the existence of an event (e') at some time before the event (e) asserted in the *again* sentence. However, this seems to be too loose an admittance condition on the utterance. If I say *I went to the library again*, it is not enough that I have been to the library once before at some point in my life – for presumably I have been numerous times – but rather that there is some other relevant instance of my going to the library, either in the preceding utterances or at least in common ground, for example:

(3.9.) A: What did you do today?

        B: Well, this morning I worked in the library.

        A: And this afternoon?

        B: I went to the library again.

In this sense, *again* is very much like *too* and other additive particles (see van der Sandt & Geurts, 2001). The presuppositional element of *again*'s meaning must be more constrained than von Stechow's (1996) proposal.

Fourthly, there are concerns about the very practice of decomposition. Von Stechow himself (2003:422) worries that the use of the BECOME operator may be too strong: as the object is in its scope, the semantics proposed allow for the possibility that the window is *created* as open. This is obviously undesirable. Klein, meanwhile, highlights a more fundamental problem with decomposition as presented by von Stechow (1996, 2003): "we must carefully distinguish whether a verb content has one, two or even more temporal variables, on the one hand, and the descriptive properties which characterise these subintervals, on the other. An operator such as BECOME conflates these two notions" (Klein, 2001:282). This, together with all the other problems explicated above, leads us to adopt Klein's approach in the next chapter.

3.3. Summary

In this chapter, I have shown how the two standard views, represented by Fabricius-Hansen (2001) and von Stechow (1996, 2003), deal with the puzzling *again* data, but how neither offer a comprehensive or satisfactory account of *again.* In particular, there are problems concerning the constraints of *again*'s definitions, overgeneration or undergeneration by the theories, and the role of focus. It would be tempting to decide in favour of the structural approach on the principle of theoretical parsimony: if general syntactic, semantic and pragmatic principles are able to account for all uses of *again* with just one meaning, that would provide a more elegant account. Lang et al. argue along this line: "accounting for the repetitive-restitutive duality by positing genuine lexical ambiguity is not a very appealing solution as it lacks explanatory power … it would lead to an inflation of homonymous lexical entries" (2003:14). However, across the lexicon "genuine polysemy is the rule, rather than the exception, particularly among frequently used words" (Wasow, Perfors, & Beaver, 2005:21). In the following chapter I adopt the account developed by Klein (2001) and Beck (2006) not on grounds of economy, therefore, but rather because it is able to address some of the problems found in the standard views.

4: Klein, time, and again

In the previous two chapters I set out the two standard views on *again* – 'lexical' and 'structural'. Across these two approaches we have seen aspects which any comprehensive account of *again* must include:

- the range of repetitive and restitutive readings
- the structure from the speaker's perspective and disambiguation from the hearer's perspective
- the notion of scope
- the inclusion of focus
- the aspect of contrast
- the role of discourse context

However, the standard views differ in the extent to which these are taken into consideration and explained. They leave us with some unsolved issues:

- an account of and explanation for the systematic but not absolute effects of focus stress
- presuppositions which are not just existential
- a way of capturing contrast with preceding time periods if it is not part of the semantics
- the availability of intermediate readings

This section presents the work of Klein (2001, 2010, to appear) on *again*, together with Beck's (2005b, 2006) formal explication of his insights on focus, and shows how it meets these requirements and offers solutions to the issues. I then extend the Kleinian analysis to some of the data which arises in work within the 'standard' views, which further demonstrates its potential. Two of the issues that remain problematic but which more empirical data might help to clarify – the nature of *again*'s association with focus stress and the possibility of intermediate readings – are put forward as topics for an experimental perspective.

4.1. Klein and time

There are two key ingredients of Klein's approach to time in language – namely, his proposed Basic Time Structure, and the importance of the discourse context. The former is set out in Klein (1994), and more fully developed in (2010), a paper which opens as follows:

> The aim of this paper is, of course, not to give answers to the many problems that were so intensively discussed in almost two millenia of research on temporality; any such idea would be presumptuous. The idea is rather to sketch a new and simple way to approach these problems, a way which systematically derives the meaning of classical temporal categories…. In a way, the following considerations should primarily be seen as an invitation to follow a certain way which I believe to be promising. (Klein, 2010:1222)

And this is an invitation which I aim to take up in the following sections. While I work within this framework, Klein's caveat should be born in mind – it is not (yet) a polished and comprehensive model, but a set of proposals whose value is to be explored. We shall see that Beck's (2006) perspective adds clarity and explanatory power, while the analysis of *again* using Klein's approach raises some questions about this framework.

4.1.2. The Basics

Klein proposes what is in many ways a rather simple approach to the encoding of temporality in language. The most important elements are time spans and the relations which form between them. Time spans are built up – added and selected – as morpho-syntactic operations take place on lexical items to create the complex temporal structure of a whole sentence. The Basic Time Structure includes:

- an infinite set of time spans;
- an order relation on time spans (BEFORE);
- a topological relation IN between time spans;
- for each time span t, a distinguished time span which includes t – the REGION of t;
- and a distinguished time span, the ORIGO – 'now' (Klein, 2009:30)

We can see how this works out in an example:

(4.1) Bill was running.

Firstly, the verb stem *run* has had *-ing* added, rendering it a present participle. This operation has the effect of selecting a sub-time of *run*'s time span; adding BE maintains this new time

variable; adding finite marking adds a topic time and links this to the time of utterance, in the posttime of the topic time. Incidentally, this provides the sense of being "in the midst of the event" (Klein, 2010:1238) which the imperfective has.

```
+++[++++]++          [          ]
topic time        time of utterance
```
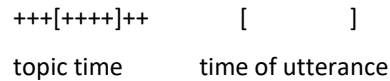
Fig.4.1. The past progressive.

Verbs may also have a complex internal temporal structure. In (4.1), *run* has just one time span which applies to one argument, *Bill*. However, a verb may have more time spans and more arguments: it is important to "distinguish between time spans that are relevant for the subject ('x be active') and time spans that are relevant for the object ('y be not open – y be open')" (Klein, 2009:77). A verb has a 'scaffold' of pairs of time and argument variables, which are filled by descriptive properties. In principle, a verb may have any number of argument–time pairs, but Klein identifies four primary types in English:

A. one argument at one time, e.g. *sleep, dance, be*

B. one argument with source time and target time, e.g. *die, rise*, *remain*

C. two arguments at the same time, e.g. *cost, weigh*

D. two arguments, one at one time, one with source and target times, e.g. *leave, close* (Klein, 2010:1231)[9]

For example, the first argument of *close* has one time variable at the first time (the source time, t_s), <be active>, and is realised by the grammatical subject. The second has two time variables, <open> and <closed> at the source time (t_s) and target time (t_t):

> *close*
> t_s<be active>
> t_s<open> t_t<closed>

Note that AT-structures must be established not by intuition, but by "the fact that some subinterval is accessible to morphological or syntactic operations in the particular language" (Klein, 2010:1228). The particular properties which Klein assigns to AT variables, e.g. 'be

---

[9] These groups do correlate to some extent with traditional Vendlerian lexical aspectual classes, but not entirely. Klein argues that identifying a verb's telicity is so problematic because it depends on the meaning of individual verbs and our world knowledge about its likely duration, hence the new approach here (Klein, 2010:1230).

active', remain, however, rather vague and intuitive; this shall not be improved upon at present, but must be borne in mind as a potential problem.

It is already becoming obvious how this relates to *again*. The question could be asked at this point, whether we have not just painted an old framework in new colours. Is this not just like von Stechow's (1996, 2003) decomposition, albeit with new terminology? It is a type of decompositional approach, of course. However, the terminology actually signals some fundamental differences. Firstly, 'time span' indicates that "the arguments are temporally parametrized, i.e. there is not just an x but an 'x at t_1', 'x at t_2' etc" (Klein, 2010:1227). Secondly, 'time-argument variables' shows that the time and argument scaffolding is kept distinct from its properties, unlike operators such as BECOME. Thirdly, it keeps semantics and syntax separate, while showing how the two relate. Fourthly, relating the topic time to the time of utterance shows how important the discourse context and general pragmatic principles are for Klein's approach. In particular the Principle of Chronological Order plays a role: "Unless marked otherwise, order of mention corresponds to order of events" (Klein, 2001:277).

4.2. Klein *again*

Klein defines *wieder* (we can take this to also be *again*, as Beck (2006) does) as 'and this not for the first time' (2001:268). It is therefore an underspecified meaning: 'this' has to be identified. Klein assumes that *again* in sentence-final position can modify just part of a verb's lexical meaning, and proposes the following principle:

> "the particle *wieder* affects the time variable of a lexical verb in its scope. If there are two such variables, rather than one, *wieder* MUST affect the second one, and it CAN additionally affect the first one." (Klein, 2001:282)

Here "'affect' means that the descriptive properties associated with the relevant time variable contribute to the 'this'" (Klein, 2001:282). If it affects both time variables, then it has the 'repetitive' reading; if only the second, then the 'restitutive' one – only the state of being closed is 'not for the first time', not the whole eventuality.

> *He closed the door again.*

> t_s<be active>

again [t$_s$<open>   t$_t$<closed>]   (repetitive)

t$_s$<be active>

t$_s$<open>   *again* [t$_t$<closed>]   (restitutive)

Beck observes that Klein's key assumption, although non-explicit, is that "he takes the presupposition introduced by *again* to be about a specific time, not existential" (2006:285). In other words, the presupposition triggered by *again* is anaphoric on another eventuality at a specific time. In his formal description, Beck therefore adds an anaphoric element – a free time variable *t'* – to *again*'s presupposition[10]:

$$[again] \ (t') \ (p) \ (t) \ (w) = 1 \ \text{if} \ p(t)(w) \ \& \ p(t')(w) \ \& \ t' < t$$
$$= 0 \ \text{if} \ <p(t)(w) \ \& \ p(t')(w) \ \& \ t' < t$$
$$\text{undefined otherwise.}$$
(Beck, 2006:286)

So an *again* sentence may be felicitously uttered in the case that there is a specific time *t'* which is "assigned a value by the contextually relevant variable assignment" (Beck, 2006:286) – i.e., it finds an antecedent in the given context – and which has similar properties to a later time *t*, about which the assertion is made. That the antecedent for *t'* precedes the assertion in a discourse follows from the Principle of Chronological Order. The times *t* and *t'* are therefore identified with the topic times of the *again* sentence and a preceding utterance. This is therefore salve to Klein's unease about presuppositions (see Footnote 1), that the notion of presupposition "is not relative to the crucial notion of topic situation" (Klein, to appear:25, Footnote 16). Both assertion and presupposition, in Beck's formulation, must be about a topic time, or rather, about two different topic times.

Klein's informal definition, which we could expand as 'and this not for the first time, of relevant topic times', therefore improves on von Stechow's (1996, 2003) existential presupposition. It may not actually be necessary to expand Klein's definition in this way, if it can be shown that the presupposition's requirement to be fulfilled by an eventuality at a relevant topic time is a function of general pragmatic principles rather than of semantics, for example as part of seeking a coherent discourse. This would be in the spirit of work within Dynamic Representation Theory (e.g., Kamp and Rossdeutscher, 1994; Geurts, 1999): "A

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[10] Where (p) is a property of times (t) and (t'), and (w) is the world in question.

presupposition is not just something that is taken to be true in the given context: it is something that is retrieved from the context" (Geurts, 1999:18). Fabricius-Hansen adds, "discourse referents established in the sentence being processed should, as far as possible, be identified with referents already in the discourse universe, rather than be established as new referents in the universe" (2001:110).

4.3 Focus on *again*

Integral to Klein's (2001) observations on *again* are the effect which focus has on available readings and in creating two possible readings even when *again* modifies a state. Focus, as a pragmatic factor, is clearly dependent on the discourse context: generally, what is already in the discourse is backgrounded; new information is focused. *Again,* as a presupposition trigger, is also dependent on the preceding discourse. Beck (2006) formalises these contributions of focus and *again* using Rooth's (1992) Alternative Semantics (see Ch.2.2.2). To see how this works, let us return to the famous Axalp example.

(4.2.a) In the fall of 1997, they were in Riva. The next fall, they were on the AXALP again.

             t1 <in Riva>   t2 <on the Axalp>

(4.2.b) In the fall of 1997, they were on the Axalp. The next fall, they were on the Axalp AGAIN.

             t1 <on the Axalp>   t2 <on the Axalp>

In (4.2.a), being on the Axalp at t2 (the second topic time) is new information (or, at least, not maintained from the prejacent utterance), and so is focused. The focus has its own presupposition that "the context provides a focus alternative to the proposition that is asserted" (Beck, 2006:288),[11] i.e., that they were somewhere else (at some other time). It has the alternative set *They were on Mont Blanc / in Cambridge / in Riva etc at some other topic time.*[12] The previous sentence therefore provides an appropriate focus antecedent at t1, the first topic time. *Again* also introduces a presupposition – that they had been on the Axalp before – which is not met in the discourse. It therefore has to be accommodated at a time before t1.

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[11] Beck formalises this presupposition as

$[\![\, [\alpha < C_i] \,]\!]_o{}^g$ is only defined if $g(C_i)$ $[\![\alpha]\!]_f{}^g$ & $g(C_i) \neq [\![\alpha]\!]_o{}^g$. If defined, $[\![\, [\alpha < C_i] \,]\!]_o{}^g = [\![\alpha]\!]_o{}^g$.(2006:288)

Where α is a semantic object, $[\![\alpha]\!]_o$ its ordinary semantic value, $[\![\alpha]\!]_f$ its focus semantic value, < the operator added by focus, C_i a variable – the focus anaphor – and g a variable assignment function.
For the purposes of the proceeding analysis, however, the informal version suffices.

[12] The set of alternatives may vary across topic times. One way Beck suggests formally accounting for this is 'to assign a focus feature to the silent time variable" (Beck, 2006:294).

Thus the interpretation of alternating locations at relevant topic times results: at the Axalp, in Riva, and then at the Axalp. This is the element of contrast which Fabricius-Hansen (2001) includes in *again*'s lexical meaning; on the current view, it can be pragmatically inferred as a result of the interaction of the semantics of *again* and focus stress.

In the second, being on the Axalp is old information in the discourse and is backgrounded. Focused *again* has the focus alternatives *still* and Ø[13] and the first sentence is thus an appropriate value (*they were on the Axalp Ø*). *Again* itself also introduces a presupposition – that they were on the Axalp before – and this is also met by the preceding sentence: the presuppositions of focus and *again* coincide. Thus, focused *again* has the effect that *t'*, the anaphoric element, is "identified as the immediately preceding topic time – typically, the topic time of the immediately preceding utterance" (Beck, 2006:309). Of course, it is inferred that there is also an intervening time span, with a contrasting property of not being on the Axalp, otherwise *still*, not *again*, would be appropriate. When the *again* sentences are heard 'out of the blue', more has to be accommodated, but the same steps are taken to reconstruct the context, so that one is likely to end up with the same readings as the context provides here. Beck therefore concludes that these examples "show us that focus all by itself has an effect on 'repetitiveness', even in cases in which a true repetitive/restitutive ambiguity is not involved" (Beck, 2006:292). The test for this approach is clearly the *open/close* example, and this will be covered in Ch.4.4.4 below.

4.4. *Again* (re)analysed

It is thus already clear that this approach is able to offer an explanation for the interaction of the scope of *again* and focus stress; to account for the fact that the presupposition triggered by *again* is not just existential; and to encompass the notion of contrast. It therefore seems auspicious in comparison to the standard approaches reviewed in Ch.3. Armed with the basics of Klein's proposals about time, his definition of *again*, and Beck's explanation for the effects of focus stress, we can now consider how this approach is able to deal with the rest of *again*'s characteristics, set out in Ch.2.2 and expanded in Ch.3 and Ch.4. Klein (2001) and Beck (2006) concentrate on the Axalp example, and the pairs *open/close* or *remember/forget*. In this section I extend the framework to cover all four types of AT-structure – and some others – in the spirit of Fabricius-Hansen's '*wieder*' family. In addition, the full instantiation of Time Structure with AT-variables as it currently stands is only developed in Klein (2010); the analysis here thus builds upon those examples worked through in Klein (2001) by

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[13] For justification of this assumption, see Beck (2005a).

differentiating the time variables for different verbal arguments. In some instances Klein's (2001) or Beck's (2006) own analysis is employed; in others I suggest a new analysis.

4.4.1. Type A: one argument, one time variable

Type A verbs have one argument paired with one time variable. Many (though not all) Vendlerian states are type A verbs, and one case – *be* + location prepositional phrase – has already been extensively discussed with the Axalp example. It is clear that because *be* has only one argument with one time variable, there are no possibilities of ambiguity arising due to the verb; 'this' can only be <being on the Axalp> as there is no choice of subintervals. The different interpretations here are caused instead by the discourse structure and focus stress.

Note, though, that this is only possible for verbs for which we know that the situation time related to the asserted topic time has contrasting pretimes and posttimes (e.g. when they were not on the Axalp). Thus, 'she was cross again' is possible; 'she was a woman again' is not possible (cross-dressing or gender realignment situations excepting). In Klein's (1994) nomenclature, this latter type have 0-state contents which have "no T[opic]T[ime]-contrast; if they are linked to a particular TT, then they are automatically linked to another TT" (1994:101). Again, this can be linked to the explanation for repetitive and restitutive interpretations: if the contents holds not only for the asserted topic time, but for any other as well, then there cannot be a contrast with a preceding topic time, which is required. In some circumstances, however, such verbs with 0-state contents are modifiable by *again*, because *again* can operate at the discourse level, i.e. the time of mention is 'not for the first time' – hence the prime number and president examples (2.2.6.1).

Some Vendlerian activities are also type A. From (4.3.a–b) it is clear that they behave in much the same way as states with *again*:

(4.3.a) Yesterday she read. Today she read AGAIN.

        t1 <read>   t2 *again* <read>

(4.3.b) The day before yesterday, she read. Yesterday she wrote. Today she READ again.

                 t1 \<read>   t2 \<write>   t3 *again* \<read>

4.4.2. Type B: one argument, two time variables

Analysis of type B verbs proves more complex. Firstly, two uncontroversial examples are considered; secondly the nature of counterdirectionals, such as *fall*, are examined in more detail; thirdly, a particular subgroup of proposed type B verbs, such as *remain* and *stay,* is analysed; and fourthly, traditional 'semelfactives' with *again* will be explored. This last point will lead to an interesting observation about the interaction of aspectual coercion with *again*. It will be seen that Klein's statement that some verbs "may be ambiguous between type C and type D" must be extended – verbs may often be ambiguous between type A and type B too, and their disambiguation depends on context.

Recall Klein's principle that when a verb has two time variables, *again* in final position affects t_t and may affect t_s as well. Either the property of t_t is 'not for the first time', or the properties of t_s and t_t are; thus two readings are available for type B verbs, such as *wake up*.

(4.4.a) Peter fell asleep, and half an hour later he WOKE UP again.

        t1 t_s\<awake> t_t\<asleep>   t2 t_s\<asleep> *again* [t_t\<awake>]

(4.4.b) At 6 o' clock Peter woke up, and at 6.30 he woke up AGAIN.

        t1 t_s\<asleep> t_t\<awake>   t2 *again* [t_s\<asleep> t_t\<awake>]

(4.4.a) has a restitutive reading, as *again* triggers either the presupposition that Peter had woken up before or that he was awake before. The prejacent utterance fulfils the latter presupposition, because \<awake> is the t_s of *fall asleep*. Focused *woke up* has alternatives of the type 'V-ed', and this is met by *fell asleep*. (4.4.b) is repetitive, as the first possible presupposition of *again* is met by the preceding utterance – that Peter had woken up before – while focus on *again* also finds the alternative *Peter woke up Ø* in the preceding sentence. In this coherent discourse, then, the presuppositions triggered by *again* and focus coincide, although they are independent. This analysis is identical to Beck's analysis of type D verbs *open/close*, which shows that "no matter which interpretation of again we assume, the presupposition introduced by focus independently already requires that there be an opening of the door; temporal flow implies that this opening be prior to t2. Thus focus and discourse interpretation all by themselves trigger a repetitive interpretation. The repetitive/restitutive ambiguity need not be formally resolved at all" (Beck, 2006:297). That is, the effects of focus

and context disambiguate *again*, without their being tied semantically to *again*'s meaning. It is also possible to construct a discourse where the presuppositions of focus and *again* are given value independently, e.g.:

(4.5) Peter fell asleep, and half an hour later he woke up, but then he fell ASLEEP again.

t1 t_s<awake> t_t<asleep>   t2 t_s<asleep> t_t<awake>   t3 *again* [t_s<awake> t_t<asleep>]

This again shows that the fixed relationship between focus and readings of *again* that J&B (2003) favour is probably not viable – a point to be taken up again in Ch.4.4.6.

4.4.2.1 The case of *fall*

Klein analyses counterdirectional *fall* as a type B verb:

(4.6.a) Yesterday the shares fell. Today they fell AGAIN.

      t1 t_s<higher> t_t<lower>   t2 *again* [t_s<higher> t_t<lower>]

(4.6.b) Yesterday the shares rose. Today they FELL again.

      t1 t_s<lower> t_t<higher>   t2 t_s<higher> *again* [t_t<lower>]

                        (Klein 2001:283; my translation)

The repetitive (4.6.a) and restitutive (4.6.b) readings may be explained in the same way as for the two examples above. In the first case, focus on *again* has its focus alternative, that *the shares fell Ø,* met in the preceding discourse. *Again*'s presupposition that the shares fell before, is also met. In the second case, focused *fell* has the alternative *rose*, and *again* concordantly affects t_t which has happened before, as the t_s of *rose*. Again, this is clearly similar to von Stechow's analysis that *fall* may be decomposed as (BECOME[MORE[low]]) (von Stechow:1996:47).

However, it might be objected that the analysis of *fall*/*rise* as type B is mistaken: Fabricius-Hansen (2001), for whom counterdirectionals form the bedrock of a lexical account, writes: "such change-of-state eventualities… are processes or activities rather than achievements or accomplishments (or one-state rather than two-state situations in the terminology of Klein 1994)" (Fabricius-Hansen, 2001:117). *Rise/fall* are unlike *open/close,* because for *open* only the first and a later time span have the properties 'closed' and 'open', whereas any two time spans in an eventuality of falling have relative properties of 'higher' and 'lower'; this is the typical distinction between heterogeneity and homogeneity. To say that *fall* is type A, though,

would leave their ambiguity of *again* unexplained, and force us back to a lexical account with two meanings.

I would like to suggest, however, that verbs like *fall/rise* are actually ambiguous between type A and B, and therefore Klein's account of them and *again* may be satisfactory after all. Hay, Kennedy & Levin (1999) argue convincingly that both 'degree-achievement' verbs and 'verbs of directed motion', like *fall/rise*, "describe a change along a projected scale", and their telicity depends "on the boundedness of the difference value" (1999:14). This means that if a bound, or maximal or minimal value, is provided, either explicitly as an argument, or as a consequence of context or world knowledge, then they receive a telic reading; otherwise they have an atelic one. For example, the ground provides a lower bound for the sheep (4.7.b), but there is no lower bound for temperature in (4.7.a) (speakers do not usually think of absolute zero when talking about temperature), hence the entailments in (4.7.c) and (4.7.d):

(4.7.a) The temperature fell.
(4.7.b) The sheep fell from the cliff.
(4.7.c) The temperature is falling $\Rightarrow$ The temperature has fallen.
(4.7.d) The sheep is falling to the ground $\not\Rightarrow$ The sheep has fallen to the ground.

This means that when a bound is provided in context, such verbs have two time variables in Klein's model – a source time and a target time, akin to *open/close*. Thus, the ambiguity encountered with *again* in instances such as (4.8) is unproblematic:

(4.8.a) The submarine descended and then rose again.

    t1 t_s<higher> t_t<lower>   t2 t_s<lower> *again* [t_t<higher>]

(4.8.b) The submarine rose and then rose again.

    t1 t_s<lower> t_t<higher>   t2 *again* [t_s<lower> t_t<higher>]

I suggest that restitutive contexts always provide such bounds. In a context such as (4.6.b), the fact that the shares fell after rising means that the shares must have stopped rising at some inferred point, and this can be taken as the upper bound of the rising eventuality. It therefore is taken to have two time variables, a source time, when they started to rise, and a target time, when they stopped rising (in order to start falling). If we can assume that *fell* is also taken as a type B verb, by comparison, then *again* modifies t_t as our original analysis proposed (4.6.b). Thus *fall* and *rise* have two time variables and allow a restitutive reading. In the repetitive

case, it does not matter whether *fall* is of type A or B – the reading still holds. This pragmatic view of deriving lexical aspect also fits in perfectly with Klein's emphasis on discourse context and world knowledge.

4.4.2.3. The case of *stay*

Klein also suggests that there are type B verbs whose two time variables have identical properties, e.g., *remain* and *stay*. There seem to be morph-syntactic and semantic operations in which only the second time variable is accessed:

(4.9) Gutenberg was forbidden to stay / did not stay / almost stayed in Strasbourg *(*Klein, 2010:1229)

One might expect, therefore, that *again* also demonstrates an ambiguity with such verbs.

(4.10.a) Ron stayed in his room this morning, and this afternoon he stayed there AGAIN.

$\quad$ t1 t_s<in his room> t_t<in his room> t2 *again* [t_s<in his room> t_t<in his room>]

(4.10.b) Ron left his room this morning, but he STAYED there again this afternoon.

$\quad$ t1 t_s<in his room> t_t<out of his room> t2 t_s<in his room> *again* [t_t<in his room>]

However, the second case does seem distinctly odd – it is not clear that any sort of restitutive interpretation is possible. The problem is that we know that there must be a pre-time to t2 in which Ron has returned to his room. This therefore is not comparable to the *fall* or *open* examples, in which the 'opposite' state of t_t of t1 can be the t_s of t2; t1 and t2 cannot form a larger eventuality. Nor is it comparable to Klein's diagnostic sentences, from which we infer that Gutenberg was already in Strasbourg, in the pre-time of 'stay'. Providing a pre-time does not help the situation:

(4.11) Ron left his room this morning. He came back at lunchtime, and he STAYED there again this afternoon.

These verbs are either anomalous in their interaction with *again* or, alternatively, they could in fact be type A. Just as some verbs provide some descriptive content for the post-time of some arguments (for example, from *George painted the fence red*, one can safely assume that the property of the target time of the argument 'fence', <is red>, also continues into the post-time of this eventuality), perhaps *remain* and *stay* provide some description for their pre-time, and

this is what is suggested by Klein's diagnostic sentences, rather than their having a source and target time.

4.4.2.4. The case of *sneeze*

Klein (1994) suggests that semelfactives are branching two-state verbs, so that *blink* (of a light) might have the structure:

$< t_{s1}$<light not on> t_{s2}<light on>> t_t<light not on>   (Klein, 1994:97)

And one could imagine, somewhat flippantly, that *sneeze* is decomposed:

$< t_{s1}$<still> t_{s2}<achoo>> t_t <still>

The easy-to-get interpretation of iteration in aspectual coercion (e.g., *the light was blinking*) is explained by the identity of the first and last time intervals, necessary for cyclical iteration (Klein, 1994:96).

However, semelfactives' interaction with *again* shows that they either should be analysed as type A verbs which happen to have a very short duration, or that Klein's principle of there being the 'choice' for *again* to affect one or both time variables, is not universal. This is because it seems that there is no way that *again* can affect only the second time variable to render a restitutive reading; only repetition of the whole eventuality is possible.

(4.12) He sneezed, and then sneezed again.
$< t_{s1}$ <<still> t_{s2}<achoo>> t_t <still>   *again* [$< t_{s1}$ <<still> t_{s2}<achoo>> t_t <still>]

Iteration of semelfactives involves some mental gymnastics on the part of the hearer: "the sense of repetition must be 'coerced' into the sentence: it is constructed online in working memory… the hearer is cued to the need for coercion by the ill-formedness of the simple reading" (Jackendoff, 2002:391–392). If semelfactives have only one time variable, these gymnastics just have to be more spectacular, because an interval with a contrasting property (<light not on>, <still>) is inserted between each iterated time variable as well.

Interestingly, it seems that *again* has to modify the aspectually coerced interpretation of semelfactives, not the 'pure' properties of the AT-variables.

(4.13.a) He jumped to reach the apple for quarter of an hour. Then he jumped for it again.

(4.13.b) He jumped to reach an apple hanging on the tree. Then he jumped again until sunset.

The first pair of sentences seems fine; the second distinctly odd, or has to be reread when 'until sunset' is reached. In the first case, the intuition is, I think, that the second topic time is also a case of multiple jumping, i.e., from *again,* we infer that the aspect of the verb in the *again* sentence is identical to that of its antecedent. In the second, the aspectually coerced verb in the *again* sentence has as its antecedent a semelfactive – a single cycle of jumping – and this does not seem to satisfactorily fulfil the presupposition triggered. The following pair makes this distinction clearer, and also suggests that a semelfactive may have its iterative counterpart as its antecedent (4.14.b), but not vice versa (4.14.a):

(4.14.a) He gave a wave. And then waved again until the train had disappeared from view.

(4.14.b) He waved as the train chugged out of the station. And then gave a wave again as it disappeared from sight.

4.4.2.5. An aside: *again* and aspect

This brings us to an interesting interaction of grammatical aspect with *again* with type A and C verbs. To illustrate, I shall consider the effect of *again* in the present imperfective and perfective with a type A verb, *jog*.

In the simple (or perfective) present without a temporal adverbial, *jog* has a habitual reading: *Bill jogs* tells us that Bill is somebody who is in the habit of jogging. On the other hand, the progressive (or imperfective) may be used when the eventuality is happening right now: *Bill is jogging*. When *again* is added, the appropriate contexts of use for the perfective are severely limited, and those of the imperfective expanded.

(4.15.a) Bill jogs again.

(4.15.b) Bill is jogging again.

The first may only be used in particular discourse contexts or styles in which all verb types may be used in the simple present to describe ongoing action, such as in sports commentaries (4.16.a), or when a habit with two related topic times is described (4.16.b):

(4.16.a) Bill jogs down the left-hand side, he passes, he jogs again, he scores!

(4.16.b) In the morning Bill jogs, and in the evening he jogs again.

Again with the progressive, meanwhile, describes an ongoing action which is repeated (4.17.a), or a resumed habit (4.17.b).

(4.17.a) Bill is jogging round the field. Now he's walking. Now he's jogging again.
(4.17.b) Bill used to jog but last year he hurt his leg. But now he is jogging again.

This distinction can be explained using Klein's Basic Time Structure. With the present perfective, the time of utterance is included in the topic time (as it is present tense) and something is asserted about the ORIGO – the time span 'now' – that holds for all time: the topic time is the entire time. Therefore it usually has a habitual reading with most activities, which we know cannot be true of the subject in every moment. *Again* requires two non-adjacent topic times for what is repeated. Therefore it is incompatible with the simple present (barring the two exceptions noted): there cannot have been a time at which the subject did not jog.

The progressive, on the other hand, is formed from finite BE + V$_s$-*ing*, which has the function of selecting a sub-time of the time interval of the verb. I suggest that if the *-ing* construction selects a subinterval of the time variable of 'jog', then this is like giving it boundaries. We know that there is possibly a pretime and posttime at which the subject is also jogging, but also that there may be times before or after that at which they are not jogging, because, unlike the perfective, the present imperfective asserts nothing about all time. It is therefore plausible that there is another subinterval of another topic time at which Bill was also jogging, so *again* may be felicitously used. This can be illustrated schematically, and compared to *still*, for which no contrasting intervening time is inferred:

```
Bill is jogging again
+++++[++++]++++          +++++++[+++++++]++
       time of psp        time of assertion


Bill is still jogging
+++++++[+++++++]+++++++++++++++[+++++++]++
       time of psp        time of assertion
```
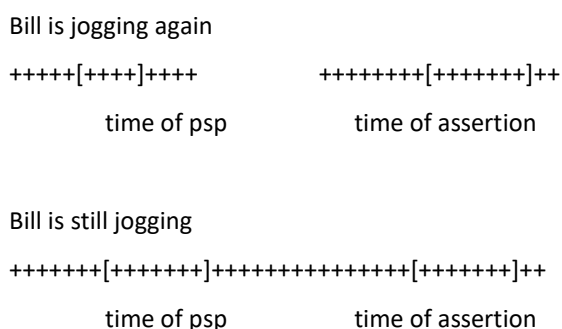
> **Fig.4.2.** The present progressive with *again* and *still*

Little has been said about tense or aspect in work on *again*, for the sake of simplicity. In making these observations, I do not mean to imply that other views could not account for the interaction of *again* with tense and aspect within their framework of temporality, but merely to show that there are interesting data that demand an explanation, which Klein's Basic Time Structure is able to provide.

4.4.3. Type C: two arguments, one time variable

Type C verbs display the same pattern with *again* as type A verbs.

(4.18.a) Yesterday a bag of potatoes cost one pound. Today it costs one pound AGAIN.

t1 \<bag of potatoes\>	t2 \<bag of potatoes\>
t1 \<one pound\>	t2 *again* \<one pound\>

(4.18.b) On Monday a bag of potatoes cost one pound. Yesterday it cost eighty pence. Today it costs ONE POUND again.

t1 \<bag of potatoes\>	t2 \<bag of potatoes\>	t3 \<bag of potatoes\>
t1 \<one pound\>	t2 \<eighty pence\>	t3 *again* \<one pound\>

Vendlerian activities such as 'play the flute', 'read a book', 'sing opera' must also be of this type, as the same effects with *again*, focus, and discourse context are observed.

(4.19.a) Yesterday she played the flute. Today she played the flute AGAIN.
(4.19.b) On Monday she played the flute. Yesterday she played the piano. Today she played the FLUTE again.

4.4.4. Type D: two arguments, one with one time variable, one with two time variables

Here we return to the starting point of the work on *again*.

(4.20.a) Otto closed the door. Ten minutes later, he OPENED it again.

t1 t_s\<be active\>	t2 t_s\<be active\>
t1 t_s\<open\> t_t\<closed\>	t2 t_s\<closed\> *again* [t_t\<open\>]

(4.20.b) Otto opened the door. Ten minutes later, he opened it AGAIN.

    t1 t_s<be active>   t2 t_s<be active>

    t1 t_s<closed> t_t<open>   t2 *again* [t_s<closed> t_t<open>]

The analysis is the same as for the type B *open* example, except for the fact that there are now two arguments (cf. Beck, 2006:294–297). The first argument variable, filled by the subject, has only one time variable; the second, filled by the object, has two, hence the ambiguity with *again*. In (4.20.a), focus stress on *opened* seeks an alternative, *Otto V-ed the door,* and finds its antecedent in the preceding sentence. *Again* triggers the presuppositions that the door was opened before or was open before. The preceding sentence fulfils the latter presupposition, because a door has to be open in order to be closed. In (4.20.b), focused *again* presupposes *Otto opened the door Ø*, which is found in the preceding sentence, as is the first presupposition of *again*. As has been emphasised, focus stress in the context is the disambiguating factor here.

Verbs like *forget* – traditionally achievements – are also of type D, and their ambiguity with *again* is well accounted for in this schema. Note that adding an AT-variable filled by the subject <be active> to Klein's (2001) analysis seems rather inappropriate here, though – there is little sense in which the subject is active in forgetting or hearing. Again, this shows the need to make the description of AT-variables more precise.

(4.21.a) He had forgotten her name.   Then he had forgotten her name AGAIN.

    t1 t_s<be active>   t2 t_s<be active>

    t1 t_s<present> t_t<not present>   t2 *again* [t_s<present> t_t<not present>]

(4.21.b) He had heard her name.   Then he had FORGOTTEN it again.

    t1 t_s<be active>   t2 t_s<be active>

    t1 t_s<not present> t_t<present>   t2 t_s<present> *again* [t_t<not present>]

                                (Klein, 2001:283; my translation)

Johnson & Beck (2004) suggest that creation verbs, such as in *build a house, paint a picture, give an answer*, contain CAUSE and BECOME operators, as some other type D verbs do in

lexical decompositional approaches like von Stechow's (1996).[14] It is therefore plausible that they are also type D verbs in Klein's scheme, perhaps in this way:

> *write a letter*
> t_s<be active>
> t_s<no letter> t_t<letter>

The difference between these and other D type verbs is, of course, that for these verbs the second argument has the property of non-existence at t_s; the activity of the first argument brings the second argument into existence. Johnson & Beck (2004) claim that a repetitive and restitutive reading is available with *again*. They give (4.22) as an example.

(4.22) Thilo sewed a flag again.

> Thilo sewed a flag, and he had sewed a flag before

> Thilo sewed a flag, and there had been a flag before. (Johnson & Beck, 2004:119)

This seems a rather awkward use of *sew* in English; a more everyday example might be (4.23).

(4.23) Anne baked a cake again.

> Anne baked a cake, and she had baked a cake before.

> Anne baked a cake, and there had been a cake before.

However, the restitutive meaning still seems hard to achieve, even in a context which facilitates it:

(4.24) Anne was expecting people for afternoon tea, so she baked a cake. However, before the visitors arrived, Anne's dog ate the cake. So Anne baked the cake again.

In this case the definite article has to be used to get anything like a restitutive reading (although of course the very same cake cannot be baked again, only the same recipe). To my intuition, this still sounds odd however; more natural would be *John baked another cake*.

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[14] Although they do not have exactly the same structure:

Thilo sewed a flag.
λe. sew$_e$(Thilo) &
  e'[BECOME$_{e'}$(λe''. x[flag$_{e'}$[(x)]) & CAUSE(e')(e)])
(Johnson & Beck, 2004:120)

Johnson & Beck's claims therefore warrant further investigation, but this is beyond the scope of this study.

4.4.5 Type E: three arguments, two time variables

Klein (2010) outlines only the four main types of verb found in English, although acknowledging the existence of others. Double object verbs with three obligatory arguments, such as *give* and *put*, could constitute a fifth type. A proposed decomposition might be:

> *put the book on the table*
> t_s<be active>
> t_s<not on table> t_t<on table>
> t_s<no book> t_t<with book>

> *give her flowers*
> t_s<be active>
> t_s<no flowers> t_t<with flowers>
> t_s<with him> t_t<with her>

In the restitutive reading, *again* would therefore scope over the target time variables paired with both the direct object and the indirect one or locative construction, and focus on either of these is likely to favour a restitutive reading. Otherwise, they behave like type D verbs with *again*.

4.4.6 Type F: two arguments, each with two time variables?

There are clearly other logical possibilities, but many are not suggested by the semantic results of morphosyntactic operations. However, another plausible type is found in von Stechow (1996), who observes that 'holder + object resultatives', which "have the semantic property that the qualification of the target state speaks about the object *and* the subject of the verb" (von Stechow, 1996:26), seem to behave differently with *wieder*: a restitutive reading is still possible when it precedes the object, a position which usually restricts the reading to repetitive. Examples include *aufsetzen* (*put on*), *zurückbekommen* (*receive*) and *das Haus verlassen* (*leave home*). This suggests that, in AT-structural terms, the subject, as well as the object, has a second time variable.

(4.25.a) Sie ist morgen nach Hause gekommen. Dann hat sie wieder das Haus VERLASSEN. (restitutive)

She is morning to house come. Then has she again the house left.

t1 t_s<out> t_t<in>   t2 t_s<in>   *wieder* [t_t<out>]

t1 t_s<empty> t_t<occupied>   t2 t_s<occupied>   *wieder* [t_t<empty>]

(4.25.b) Sie hat morgen das Haus verlassen. Jetzt hat sie WIEDER das Haus verlassen. (repetitive)

She has morning the house left. Then has she again the house left.

t1 t_s<in> t_t<out>   t2 *wieder* [t_s<in> t_t<out>]

t1 t_s<occupied> t_t<empty>   t2 *wieder* [t_s<occupied> t_t<empty>]

While this analysis is conceivable for the English translation equivalents, evidence of the AT-variables being subject to morpho-syntactic operations is needed in order to establish the AT-structure; this, however, is hard to come by, as the two (potential) arguments share time variables. None of the operations set out in Klein (2010) affect the variable at t_t paired with the subject argument, and constrained word order in English means that there is never the possibility that *again* may appear before the object with a restitutive reading – when it immediately follows the subject it can only ever be repetitive (4.26).

(4.26) John arrived home, and then again left the house.

Type F verbs, then, must be considered only a possible type in English for the moment.

4.5. 'Intermediate' readings *again*

It was seen that a structural approach like von Stechow's (1996) allows adjunction of *again* in four possible sites, which in theory allows for two intermediate readings, as well as the repetitive and restitutive ones. As *again* does not scope over the subject in the intermediate and restitutive readings, it should be possible for the subject to be different in the asserted *again* sentence and its antecedent (as in Fig.3.4). We saw, however, that it is questioned whether such readings actually exist; if they do not, von Stechow's (1996) theory overgenerates.


How, then, does Klein's theory compare on this matter? Klein states that *again* must scope over the second time variable "and the descriptive properties coupled with it", and may scope over the first time variable and the descriptive properties coupled with it (2001:284). If we understand 'descriptive properties' to mean all arguments, the subject and object(s) they are

filled by and their descriptive properties at the affected time, then Klein's analysis leaves no room for intermediate readings. This would be a welcome outcome, and would constitute another improvement on standard theories.

First, though, it needs to be established whether intermediate readings are, in practice, possible. The difficulties of doing so with type B and D verbs are insurmountable given entailment of the restitutive reading. However, we also saw that one 'intermediate' reading is also, theoretically, possible with unergatives, or type A and C verbs in the current terminology. A way of 'accessing' this intermediate reading would therefore be to consider *again* sentences with type A and C verbs with a subject which differs from the subject of its antecedent. For example:

(4.27) The recital began. Sue played the piano, then Anthony read poetry, then Doris played the piano again.

It seems to me that this may be marginally acceptable. How could this be accounted for within Klein's framework? Recall that Klein (2001) does not use AT-structure with differentiated argument variables, but only distinguishes source and target times. A logical possibility, therefore, is that, in the more recent framework, *again* may scope over the time variables paired with one or both (or all) of the arguments. Returning to our favourite example, *open the window,* three scopes are then possible: over the target time of the object, over both of the object's times, or over the time variables of both arguments[15] – this is presented graphically below.
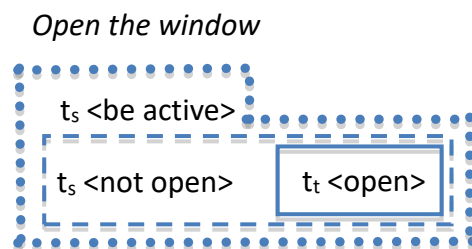
Open the window

In 'normal' circumstances, the restitutive reading of a type D verb like *open the window* occurs when *again* affects the second time variable, paired with the argument filled by the object, and the repetitive reading when it affects the source time too, paired with both objects.

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[15] Theoretically, scope over the subject argument alone is another possibility, but given the complete unacceptability of changing the object (below), which is obviously much more closely tied to the verb, and the principle that the target time *must* be affect by *again*, this is not considered.
    Sue played the piano, then Anthony read poetry, and then Sue played the flute again.

However, it would be possible, according to the suggestion here, to 'divorce' the subject and object AT-pairs, and thus have a different subject each time.

(4.28) Kerry opened the window. Half an hour later, John closed it again.

For type C verbs, there are just two possibilities – scope over the object at the source time, or both the subject and object at the source time:

Play the piano

t_s <be active>

t_s <be played>

Thus, different subjects in the *again* sentence and its antecedent should be possible when *again* affects only the object variable, as in (4.27). This has the reading 'Doris played the piano, and there had been a piano-playing before'. Unlike (4.28), (4.27) does not entail a restitutive reading, as there is no target time. Here, then, is a way of testing the availability of intermediate readings: by using type C verbs with different subjects in the *again* sentence and its antecedent.

It seems, however, that acceptability depends to some extent on the context, and in particular on the fact that the three eventualities described are part of the same larger eventuality – in this case a concert. The following sentence, largely equivalent except for the fact that the three instances are not explicitly related, does not seem so felicitous:

(4.29) On Monday, Paul sang opera. On Tuesday, Nigel recited poetry. And on Wednesday, Tracy sang opera again.

When there is only one argument, there is only one AT-variable which *again* may affect.

Play

t_s <be active>
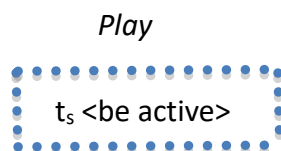
This allows for no intermediate readings, so the following example would be expected to be unacceptable:

(4.30) The recital began. Sue played, then Anthony read, then Doris played again.

The only presupposition here is that 'Doris had played before'. Here, then, is where this possible extension of Klein's theory differs from the predictions made by von Stechow's (1996), which would also allow an intermediate reading in this case.

Examples such as (4.27) are, of course, probably marginal uses, and my own intuitions are not entirely clear; further empirical data would therefore be very beneficial to establish their availability and arbitrate between von Stechow's (1996) and Klein's (2001) theories, and my own suggestion. In Ch.6, I report an attempt to collect such evidence experimentally.

4.6. Focus on *again*: pragmatic or semantic?

The examples so far have so far been made up with 'ideal' discourse contexts, although these are probably a true representation of most cases occurring in natural discourse (see Fabricius-Hansen, 2001:123ff). It has been shown how this context contributes to the disambiguation of *again*, in providing the antecedents for the presuppositions triggered by *again* and by focus. Beck's analysis of focus, therefore, "is a matter of pragmatics, the grammar does not disambiguate", which, crucially, has the consequence that "there may be variation in which interpretations an accent pattern permits depending on the context it occurs in" (Beck, 2006:300).

It should therefore be possible, in Beck's view, to get a repetitive reading without focused *again,* and a restitutive reading without focused predicate. He lists three plausible scenarios:
- focused predicate in a repetitive context with repetitive reading
    - John opened the door. Sally closed it. So John OPENED the door again / So John again OPENED the door. (Beck, 2006:298)
- backgrounded predicate and backgrounded *again* in a restitutive context with restitutive reading
    - During the night's heavy rains, the old tire in the yard had filled with water. Bill wanted to empty it, but didn't get round to it. So EWAN emptied again. (Beck, 2006:298)

- backgrounded predicate and focused *again* in a restitutive context (specifically, the immediately preceding utterance) with restitutive reading[16]
  - The shop was closed this morning. Now it is closing AGAIN. (Beck, 2006:310)

Making the assumption that focus is a pragmatic phenomenon, rather than a semantic one, means that it is defeasible; the context may 'override' the reading normally accompanying a focus stress pattern.

On the other hand, "a semantic theory of focus interpretation introduces semantic objects, focus semantic values, which are then manipulated by construction-specific rules" (Beaver and Clark, 2003:326). J&B's (2003) account of *again* is such a theory. It uses bidirectional Optimality Theory, and places determiners of focus alongside scrambling and word order as constraints. In contrast to Klein (2001) and Beck (2006), J&B therefore "predict the interpretation of a sentence with *again* in isolation… as a matter of grammar" (Beck, 2006:300). In their view, what is 'given' (and therefore backgrounded) is found not in the discourse but in the presupposition triggered by *again*.

They propose four constraints:

- DS: Definites scramble!
- SC: Surface word order mirrors scope relations!
- DOAP: Don't overlook anaphoric possibilities! (i.e. new material must be focused)
- GIVEN: De-accented constituents are given! (i.e. new material cannot not be focused) (J&B, 2001:409–410)

These are ranked: SC >> DOAP ≡ DS >> GIVEN

This is formulated for German. In English, there is no scrambling of definites, but there is some possibility of different surface word orders, leaving us with: SC >> DOAP >> GIVEN

It can therefore be shown that J&B would predict that Beck's (2006) scenarios would be blocked by optimal variants, both in production and disambiguation (it is *bidirectional* OT).

			SC	DOAP	GIVEN

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[16] In 2.2.6, we observed that focussed *again* always seems to have to have a repetitive reading. Beck admits that this is indeed a strong tendency; he predicts an exception "if the immediately preceding utterance is about a time that makes the restitutive presupposition true" (2006:310). This follows from his suggestion that when *again* is focussed, its time variable *t'* is also focussed and so requires an antecedent alternative topic time.

➔	a. focused *again,* backgrounded predicate / repetitive reading	So John opened the door AGAIN.			
	b. backgrounded *again,* focused verb / repetitive reading	So John OPENED the door again.		*	
	c. backgrounded *again*, backgrounded predicate / repetitive reading	So JOHN opened the door again.		*	

			SC	DOAP	GIVEN
	a. focused *again* / restitutive reading	So John opened the door AGAIN.			*
➔	b. backgrounded *again* / restitutive reading	So John OPENED the door again.			
	c. backgrounded *again*, backgrounded predicate / restitutive reading	So JOHN opened the door again.			*

Fig.4.3. Bidirectional OT table for three focus – *again* combinations.

The presupposition triggered in the repetitive reading of *again* is that John had opened a door before; sentences (b) and (c) therefore violate DOAP, because 'opened' and 'John' are given. The restitutive presupposition is that the door was open before, and so (a) and (c) violate GIVEN, because 'opened' is new information and is not focused. SC is not violated in these sentences, because *again* is sentence final; it would be violated when *again* precedes the verb with a restitutive reading. Therefore, whatever the context, a repetitive reading is always preferred with focused *again*, and a restitutive one with focused predicate.

Beck (2006) and Klein (2001) therefore make different predictions from J&B (2003). Given the conflicting intuitions expressed in the literature, more empirical evidence of readings available to speakers is necessary to arbitrate between them. In the next chapter, I report experimental findings constituting such evidence.

5. Experiment 1

In Ch.4, I identified two aspects of the debate on *again* which could benefit from an empirical investigation: whether focus stress is tied semantically to the lexical meaning of *again* or is an independent pragmatic factor; and whether an 'intermediate' reading is possible. In this chapter and Ch.6, I operationalise these predictions in terms of hypotheses, outline how these were tested in two experiments measuring the acceptability of *again* sentences, and report on findings. Both questions concern marginal, yet theory-critical, uses and subtle judgements which may not be reliably accessible to a researcher's intuition, so an experimental approach is particularly apposite.

5.1. Experimental Semantics

Experimental approaches to syntax, semantics and pragmatics have burgeoned in the past two decades, shedding light on theory where linguists' introspections fall short (e.g., Cowart, 1997, for syntax; Noveck & Sperber, 2004, and Sauerland & Yatsushiro, 2010, for semantics and pragmatics). Off-line acceptability judgement tasks are commonplace in experimental syntax and easily transferred to semantics (e.g. Beck and Snyder, 2001). Just as the acceptability of a certain construction in syntax can be inferred from a judgement on a whole sentence, so too can the acceptability of a particular usage of a single word in semantics be derived from a reaction to the whole sentence.

Within the literature on *again,* there seems to be a dearth of empirical data. The exceptions are Beck & Snyder (2001) and Beck (2005b), who used judgements both from a small number of informants and from the literature to test whether restitutive *again* is possible with lexical accomplishment verbs and verb + prepositional phrase constructions across 14 different languages. They constructed two scenarios which forced a restitutive reading of *again*, and asked informants whether they accepted the story or not, given its final sentence containing *again*. Here I adopt and adapt their method of context construction to elicit judgements. This heeds Schütze's (2005) warning against asking respondents directly about sentence meanings when complex phenomena such as scope are involved, and advice to use instead something like a truth value judgment of a sentence in its context.

5.2. Experiment 1: semantic or pragmatic disambiguation?

As outlined in (4.6), Beck (2006) proposes three instances in which there is not the 'normal' association of focus stress and reading of *again* (stressed *again*, repetitive reading; non-stressed *again,* restitutive reading), but which still yield, he claims, plausible readings which are determined by the context. This is based on two assumptions: firstly, that focus stress is a pragmatic phenomenon, i.e., it is not truth-conditional and operates at the discourse level; and secondly, that anything pragmatic is defeasible. In other words, the context can override the 'normal' contribution of focus stress: a restitutive context leads to a restitutive reading of *again*, and a repetitive context to a repetitive reading, if there is an independent reason for *again* or the predicate, respectively, to be focused. On the other hand, J&B (2003) maintain that focus stress is grammatically linked to the different readings of *again,* modelled with bidirectional OT constraints.

5.2.1. Hypotheses and possible outcomes

The opposing predictions made by these two approaches may be tested using an acceptability judgment task. It is assumed that *again* sentences which are grammatically and pragmatically possible in a given context are given high acceptability scores, while those which are ungrammatical or infelicitous are given low scores by speakers asked to rate how 'comfortable' they are with a given utterance. Thus, Beck's view can be turned into the following set of hypotheses:

    A. Focused predicate in a repetitive context is acceptable.

    B. Focused *again* in a repetitive context is acceptable.

    C. Focused predicate in a restitutive context is acceptable.

    D. Focused *again* in a restitutive context is acceptable.

This interaction between the independent variables context and stress is seen in the examples in Fig. 5.1.

close	Focused predicate	Focused again
Rep. context	A. Ben closed the window, but Sally opened it, so Ben again CLOSED it.	B. Ben closed the window, but Sally opened it so Ben closed it AGAIN.
Rest. context	C. Ben was in his room. He opened the window, and then he CLOSED it again.	D. Ben was in his room. The window had been closed this morning. This afternoon Ben closed the window AGAIN.

Fig. 5.1. Interaction of context and stress: an item in four conditions of experiment 1.

J&B's theory makes the same predictions in the case of B and C, but the opposite ones in A and D – these combinations of context and focus would be unacceptable.

Note that Beck identifies three levels of the factor of focus stress – focused predicate and backgrounded *again*, backgrounded predicate and *again*, and backgrounded predicate and focused *again* – but this has been reduced to two levels here. This is justifiable because the second and third levels have the same predicted outcome, according to Beck and J&B, and so the results remain informative and able to make a distinction between the two theories.

Confirmation of the null hypothesis, that there is no difference between the four conditions, is therefore support for Beck. As acceptability judgments are measured on a scale from 1 to 7 (where 1 is least acceptable and 7 is most acceptable), one possible outcome is that conditions A and D receive lower scores than B and C, but not ones indicating complete unacceptability. In order to discern whether this scenario is support for J&B, a further baseline condition is introduced: *again* sentences which are unquestioningly unacceptable because the eventuality has not happened before (5.1):

(5.1) Fred was walking in the countryside. He never had a map, and then he LOST it again.

Note that this is also unacceptable without *again*, and thus provides no possibility of accommodation. Results which demonstrate no difference between conditions A and D and this baseline represent firm support for J&B's view. A result which places A and D at an intermediate level might suggest a stronger connection between focus and *again*'s reading than Beck sets out, but perhaps not a grammatical one as J&B propose.

5.2.2. Methodology
The materials consisted of 16 experimental items, four items in a baseline condition, and 42 filler items in a basic 2x2 factorial experiment design, plus five practice items. The items were recorded by me using a portable voice recorder.[17]

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[17] The tasks may be accessed at:
http://cambridge.qualtrics.com//SE/?SID=SV_eeQs4naS7gX7zOk
http://cambridge.qualtrics.com//SE/?SID=SV_4ZQdqDTuOz0cckI
http://cambridge.qualtrics.com//SE/?SID=SV_3xttH3am0po8TFa
http://cambridge.qualtrics.com//SE/?SID=SV_25E9Dcno0lG7jVi

Each participant heard each item in one condition, four items in each condition, and never the same item in more than one condition. Items were counterbalanced across four participant groups. All participants heard the same baseline and filler items (following Cowart, 1997, this is at least two fillers per critical item). As the study is concerned with variation between conditions, not between speakers, the participant group was chosen to be as homogenous as possible: all were speakers of British English with higher education, aged 23–31 years, with none declaring that they currently work in Linguistics. Participants were asked to indicate how comfortable they felt with the third clause of each item on a scale of 1 to 7. This is a preferable measurement to a binary response, as it allows for the perhaps more nuanced judgments which are likely to be elicited by items in which semantic and pragmatic factors are manipulated.

The items for the critical and baseline conditions were devised using telic verbs with a visible result state, resultatives, put + locative constructions and verb + particle constructions, in equal measure (the latter three being 'complex predicates' identified in Snyder, 2001). These all allow restitutive and repetitive readings.

Items consisted of three short sentences, with *again* in the third sentence (Fig.5.1). Only conditions A and B require all three to provide the context and antecedents for *again*; in conditions C and D the first sentence is a scene-setter. The items were limited to fairly everyday situations, to similar word length (13–25 words) and complexity, and to the simple past tense (the past perfect is also necessary in condition D to provide the requisite context). A nuclear pitch accent, indicating focus, appeared either on the predicate (conditions A and C) or on *again* (B and D). The baseline condition items were constructed along similar guidelines (Appendix I).

With *again* appearing in just under a third of all items presented to participants, a random selection of filler items would not disguise the topic of investigation. Therefore, three other particles were chosen for the filler items, leaving the participants to infer the broad topic of investigation. *Too*, *almost* and *always* were chosen because they exhibit properties similar to *again*. *Too* is also presuppositional, can appear in two syntactic positions, and interacts with stress (Beaver & Clark, 2008:72–73). *Always* also interacts with focus stress (Beaver & Clark, 2003). *Almost* seems to be sensitive to the internal semantic structure of the verb (Rapp & von Stechow, 1999; Penka, 2006), but is more widely distributed syntactically than *again*, so only constructions comparable to *again* are used here. These particular characteristics, as well as general principles of focus stress, were manipulated to create more or less acceptable filler

items in equal measure, to provide a backdrop for the critical items potentially using the whole judgement scale. The fillers were interleaved with the critical items, so that there were between one and three fillers between each critical item, and critical items in each condition were immediately preceded by acceptable and unacceptable fillers in equal number, so as to avoid bias from any comparison effect with the immediately preceding item (Appendix II).

It was important that focus stress, an independent variable, was presented clearly. Existing empirical research on *again* (Beck 2005b; Beck and Snyder, 2001) is in written mode. However, presenting participants with written sentences with an indication of stress (capitalised, emboldened or italicised text) did not seem viable: reading such texts is not a natural activity for untrained non-linguists; there is no way of knowing whether participants are reading the sentences with the correct focus stress; and it risks drawing too much attention to this factor at the cost of losing sensitivity to the other. To improve the reliability of the data, participants therefore listened to the scenarios. Using aural stimuli has been used in studies directly investigating prosody (e.g., Birch & Clifton, 2000).

However, there is the possibility, as Clifton (2007) points out, that participants may 'replay' the sentences in their head while considering their response, but in doing so shift the position of the focus stress, or even misremember the item. This is particularly likely when hearing many similar items in quick succession. Participants were therefore given the option of replaying sentences if necessary and of taking a break during the task to minimise fatigue and improve the reliability of the results.

5.2.3. The dangers of accommodation

Beck's own intuitions about focused *again* in a restitutive context and focused predicate in a repetitive context are founded on the assumption that the hearer does not accommodate if a presupposition is met in the context: "we can suppose that one disprefers accommodation if there is an alternative interpretation that does not require it" (Beck, 2006:296). However, when the context is minimal, as in Beck's own examples and the items in this experiment, I am not so sure that accommodation can be ruled out, particularly in the case of condition D. If accommodation and a repetitive reading is possible, it would not be clear *why* participants found items in this condition acceptable: because they arrived at the restitutive reading given by the context or because focused *again* required a repetitive reading and so they accommodated the necessary facts.

To address this potential problem, an extra question was introduced to check which reading participants arrived at. After the four items in condition D, as well as four filler items (to avoid arousing suspicions), participants chose between two possible readings of the preceding scenario (Fig.5.2.).

	Scenario presented	Accommodation
Critical item	Ben was in his room. The window had been closed this morning. This afternoon Ben closed the window AGAIN.	
Follow-up question: option (a)	Ben closed the window some time ago, perhaps yesterday, so it was closed this morning. Then it opened. Then, this afternoon, Ben closed it.	YES
Follow-up question: option (b)	The window was closed this morning. Then it opened. Then, this afternoon, Ben closed it.	NO

Fig.5.2. Table showing example of item in condition D with follow-up questions to ascertain accommodation.

The order of these two options is alternated to counterbalance any order bias. If participants select the repetitive reading (a) as their understanding of the scenario, it can be inferred that accommodation is the reason for any high acceptability.

This problem of accommodation does not affect the other conditions: only a repetitive reading is possible when *again* precedes the verb in English (Beck & Johnson, 2004), so this forces a repetitive reading (or no reading at all) in condition A; conditions B and C are expected to be entirely acceptable and it is highly unlikely that hearers would accommodate to arrive at some other reading, given that the presuppositions of both *again* and focus find their antecedents in the preceding utterances.

5.2.4. Administering the experiments

All participants completed experiment 2 followed by experiment 1.[18] This is preferable to counterbalancing any effect of order by alternating it across participants, because experiment 1 draws attention to the role of focus stress, whereas in experiment 2 focus is not a factor. If participants were to do experiment 1 first, they might have looked for non-existent stress effects in experiment 2, distracting from the effects of the independent variables.

The experiments were administered on-line, using Qualtrics software (Qualtrics Labs, 2012). This entails less control over the environment in which participants completed the tasks, which could have a detrimental affect on the accuracy of the responses, although the fact that participants were potentially more at ease in their own familiar environment might favour

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[18] Four participants did experiment 2 only.

intuitive, rather than over-thought, responses. The tasks were first tested in unfavourable conditions – with poor quality audio speakers and background noise – to check that the content and intonation of the items were nevertheless clear.

5.3. Results

The results of the experiment are shown in Fig.5.3 and indicate there is some interaction between context and focus stress: conditions B and C are more acceptable than conditions A and D respectively. All are more acceptable than the baseline condition.

	Mean	Standard Deviation
Condition A	4.07	1.17
Condition B	6.41	.42
Condition C	5.42	1.19
Condition D	4.49	1.05
Baseline	1.81	1.29
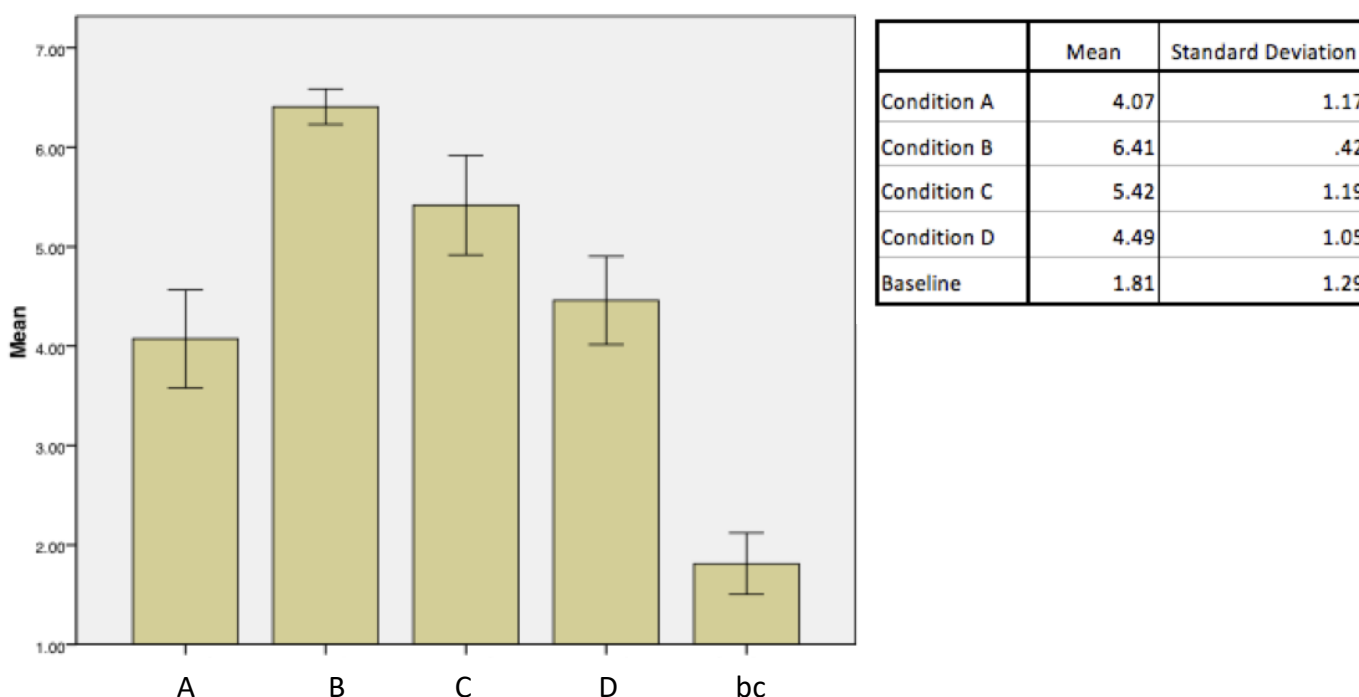
A = Condition A (repetitive context / focused predicate); B = Condition B (repetitive context / focused *again*); C = Condition C (restitutive context / focused predicate); D = Condition D (restitutive context / focused *again*).; bc = baseline.

Fig. 5.3. Chart showing results of experiment 1: mean score of items in each condition, with 95% confidence interval error bars. Table showing mean scores and standard deviation for each

A factorial repeated measures ANOVA conducted for conditions A–D by participant confirms that the interaction of the two factors is significant ($F(1,23) = 162.38$, $p < .001$) and that there is also an effect of stress ($F(1,23) = 11.6$, $p < .05$), but not of context ($F(1,23) = 2.46$, $p > .10$).[19]

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[19] Ideally, a non-parametric test of significance would be used, because a normal distribution is not expected and the data represents responses on a categorical 1–7 scale. ANOVA is used out of practical considerations; there are claims of its robustness, even when assumptions are not met (Robson, 2002:440). A non-parametric test, the Wilcoxon signed-rank test, is used for planned pairwise comparisons.

Planned pairwise comparisons using the Wilcoxon signed-rank test showed that responses in conditions A and D were significantly different from the baseline condition; that condition B differed significantly from A and D, and C and D respectively; and that conditions A and D also differed significantly (Fig.5.4.).

	Condition B x Condition A	Condition C x Condition A	Condition D x Condition C	Condition D x Condition B	Baseline x Condition A	Baseline x Condition D
z	-4.290[a]	-3.706[a]	-3.123[b]	-4.292[b]	-4.078[b]	-4.289[b]
p	< .001	< .001	< .05	< .001	< .001	< .001

Fig. 5.4. Results of Wilcoxon signed-rank test of planned comparisons. Condition A = repetitive context / focused predicate; B = repetitive context / focused *again*; C = restitutive context / focused predicate; D = restitutive context / focused *again*. (a. Based on negative ranks; b. Based on positive ranks)

Items in condition D were followed by a question to try to ascertain whether participants accommodated a repetitive reading of *again*. Results show that although accommodation was indicated in some responses, this made no difference to the mean response overall: a comparison of judgements with accommodation (mean = 4.6) and those without (mean = 4.3) using the Wilcoxon signed-rank test, showed that the difference was not significant (z = -.365, p > .10).

Fillers with *too* and *almost*, expected to be unacceptable due to placement of focus stress, did have low acceptability (mean = 2.92; significantly lower than condition A: z = -4.08, p < .001), indicating that in general participants are likely to have responded to the stress pattern in the recording, rather than 'replaying' sentences with a different stress pattern.

5.4. Discussion of results

There is partial confirmation of the hypotheses that all conditions are acceptable: the means of conditions A–D are all significantly higher than the unacceptable baseline condition. It is inferred that participants found items in conditions A and D acceptable having arrived at repetitive and restitutive readings respectively, given the context and in spite of the focus. This is empirical support for Beck's analysis; theories such as J&B's (2003) that make the relationship between focus and *again*'s reading part of the semantics of *again* are less able to account for these results.

The conditions differ more than expected, though. Conditions A and D are significantly less acceptable than B and C. There are two factors in the task which could have compromised the acceptability of items in these conditions specifically. Firstly, *again* was placed in a high

position after the verb in condition A in order to ensure a repetitive reading, but, although grammatically possible in English, this is rather marked. Of a random sample of 100 instances of *again* produced by a search on the British National Corpus, only 5 out of 60 sentences with a repetitive reading had this word order. It is therefore likely that low frequency contributed to the lower acceptability judgement. Secondly, items in condition D could be rather unusual in terms of discourse structure. Fabricius-Hansen's corpus study (using the Oslo Multilingual Corpus) found that restitutive *wieder* "most frequently modifies a telic change-of-state predicate in a context that explicitly or implicitly has established the presupposed counterdirectional change of state" (2001:125). One possibility is therefore that the less frequent discourse structure lowered acceptability. It is, of course, plausible that the likelihood of a series of utterances' occuring in natural discourse forms part of the strategy used by respondents to decide acceptability.

Another possibility is, then, that the lower acceptability of conditions A and C reflects an influence of focus in disambiguation which is stronger than Beck anticipates. Contrary to theories in which all focus is pragmatic and those in which focus is semantic, Beaver & Clark (2003, 2008) propose that there are actually three types of association with focus: quasi, free, and conventional. Only conventional association is actually lexically encoded; quasi and free are 'non-conventionalized epiphenomena'. Beaver & Clark do not consider *again*, but, given their classification, it seems that *again* might demonstrate free association with focus. It cannot be a quasi-associating operator, for which "a sentence *op(S)*, where *op* is the operator and *S* is its argument, does not entail *S*" (2008:51). This is clearly not the case for *again*. It would also be atypical of conventionally associating particles, which tend to be cross-categorial, whereas *again* may only affect a verbal phrase or sentence, but not a nominal phrase alone. For free association:

> focus marking relates both to what is said and to what is being presupposed. In a well-regulated conversation involving an utterance of an operator like *always* with an implicit domain, the domain of the operator should be such that the meaning expressed is both relevant to the issues under discussion, and compatible with whatever is presupposed. As a result, the choice of domain is tightly correlated with what is focus marked. Furthermore, since the truth conditions of operators in this class are affected by their domain of quantification or comparison, the placement of focus often correlates with relatively robust truth conditional differences (Beaver & Clark, 2008:41–42).

This description seems to fit well the properties of *again* observed in this study. It is not necessarily at odds with Beck's proposal, but it highlights the normally tight correlation

between focus and reading. A discourse which does not demonstrate the usual – although not obligatory – correlation is likely to strike a hearer as odd, and be given a lower acceptability rating, while its use is still pragmatically felicitous.

In addition, focused *again* is more acceptable than focused predicate overall. It is clear why condition A may have lower acceptability, but there is no obvious theoretical reason why this should be the case for condition C, too. This merits further investigation. In general, variability observed across participants, indicated by the relatively high standard deviation values (Fig.5.2.), is likely to be due to non-linguistic factors such as differing use of the scale, as well as fatigue, mood, and attitude to task.

Overall, however, the results of this experiment do support the suggestions of Klein (2001), formalised by Beck (2006) and adopted in Ch.4, that disambiguation is guided by discourse context, and that the presupposition of focus is resolved independently to that of *again*. In further work, the reliability of the data collected could be improved using a more natural task, such as elicited production using realia (e.g., the techniques in Dimroth's (2002) study on the usage of *wieder* and other 'focus particles' by second language learners of German). It would also be beneficial to include the third scenario considered by Beck (2006) – backgrounded predicate, non-focused *again* and restitutive reading – as a further test of the independency of focus and *again*. A corpus study would be informative, too, to establish whether such usages occur in natural discourse, but given that speech data is necessary in examining focus, a large-scale corpus study might currently be impractical.

6. Experiment 2

Recall that von Stechow's (1996, 2003) account of *again* in terms of syntactic scope allows for four readings, including two intermediate ones, while Klein's (2001) account of semantic scope allows for just repetitive and restitutive ones, and my proposed extension of Klein's would permit one intermediate reading:

Open the window

t_s <be active>

t_s <not open> t_t <open>
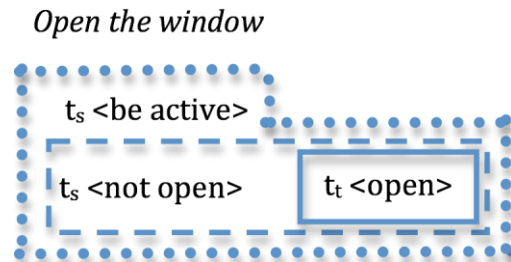
It was suggested in Ch.4.5. that the availability of these readings could be ascertained by looking at the acceptability of *again* sentences with type A and C verbs, with different subjects in the *again* sentence and the sentence acting as the antecedent of *again*'s presupposition. *Again* with intermediate readings should allow different subjects as it does not scope over them (syntactically or semantically); use of type A and C verbs removes the possibility of a restitutive reading.

6.1. Hypotheses and possible outcomes

Based on my proposal, the following hypotheses may be put forward:

    A. A different subject in the antecedent of *again* with a type A verb is unacceptable.

    B. A different subject in the antecedent of *again* with a type C verb is acceptable.

    C. The same subject in the antecedent of *again* with a type A verb is acceptable.

    D. The same subject in the antecedent of *again* with a type C verb is acceptable.

Von Stechow's account, on the other hand, would predict that all four conditions are acceptable; Klein's (2001) that only conditions C and D are acceptable. The interaction of the two factors, identity of subject and verb type, is exemplified in Fig. 6.1.

	type A	type C

Different subject	A. The recital began. Sue played, then Anthony read, then Doris PLAYED again.	B. The recital began, Sue played the piano, then Anthony read poetry, and then Doris PLAYED THE PIANO again.
Same subject	C. The recital began. Sue played, then Anthony read, then Sue PLAYED again.	D. The recital began, Sue played the piano, then Anthony read poetry, and then Sue PLAYED THE PIANO again.

Fig. 6.1. Interaction of identity of subject and verb type: an item in four conditions of experiment 2.

If the results confirm the hypotheses, this would indicate that von Stechow's account does overgenerate to some degree in allowing a possible site for *again* between the agent and verb, while my extension of Klein's framework is perhaps on the right track. It would also show that criticisms of overgeneration are misplaced, and that decompositional approaches are able to account for the reading of *again* more satisfactorily than those accounts which do not allow for such an intermediate reading (J&B, 2003; Pittner, 2003; Fabricius-Hansen, 2001).

6.2. Methodology

The design was very similar to that of experiment 1, so I will not repeat everything at length, but rather highlight a few differences and important observations.

The design was again 2x2 factorial. Each participant heard 16 critical items plus 36 fillers – some of which acted as a baseline condition – following five practice items (Appendix III). There were 28 participants split into four groups. Items consisted of a scene-setting clause, followed by three short clauses describing three facts or things that happened. This experiment takes advantage of English verbs which are both type A and C, and so the same verbs can be used in all conditions. All the verbs used were checked in the Oxford English Dictionary for intransitive and transitive entries, and were paired with objects which rendered them 'activities' in Vendlerian terms, or having one time variable in Kleinian ones. This avoided any possibility of a result state or second time variable being conceived, which would permit a restitutive reading. These two criteria obviously limited the number of verbs which could be used in the critical items, and so those used in the clause intervening between the *again* clause and its antecedent were sometimes of the type 'do some V-ing' – also an activity or verb with one time variable.[20]

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[20] The task may be accessed at:
http://cambridge.qualtrics.com//SE/?SID=SV_6DwLqqw6GdPOglu

Although focus stress was not an independent variable in the design, it was still important that the items were presented aurally to keep focus constant across items and participants, and thus avoid it being a confound. In all conditions there was an independent reason for the predicate to be focused: it finds an alternative in the prejacent clause (e.g. *play the piano* has the focus alternative *read poetry*). Although there is no restitutive/repetitive ambiguity here, it could be argued that the intermediate reading has similarities with the restitutive one, and so focused predicate is likely to encourage an intermediate reading of both conditions A and B. This biases against the hypothesis that condition A is unacceptable, and so if A is found to be less acceptable than B, this is stronger support for the hypotheses.

There was also no need for additional questions to check whether participants have accommodated a reading unintended by the experiment design. It could be possible that participants accommodate the context required for a repetitive reading, for example that 'Doris had played before' in condition A. However, this is unlikely given the focused predicate, and, moreover, there are two inbuilt checks: if items in condition A are scored as very unacceptable, then it can safely be assumed that participants are not accommodating a repetitive reading in conditions A or B, as this would render judgements more acceptable; and the results for filler items with *too*, which is also presuppositional, also indicate whether participants are willing to accommodate in general, e.g.:

(6.1) Sarah was preparing for a party. She baked, then she tidied, and she, *too*, hoovered.
>> Someone else hoovered.

6.3. Results

The results are displayed in Fig.6.2, showing that conditions A and B differ from C and D, but condition A may not differ from B.

	Mean	Standard Deviation
Condition A	2.47	1.04
Condition B	2.96	.96
Condition C	4.01	1.36
Condition D	3.66	1.37
Baseline	1.58	0.64

Error bars: 95% CI
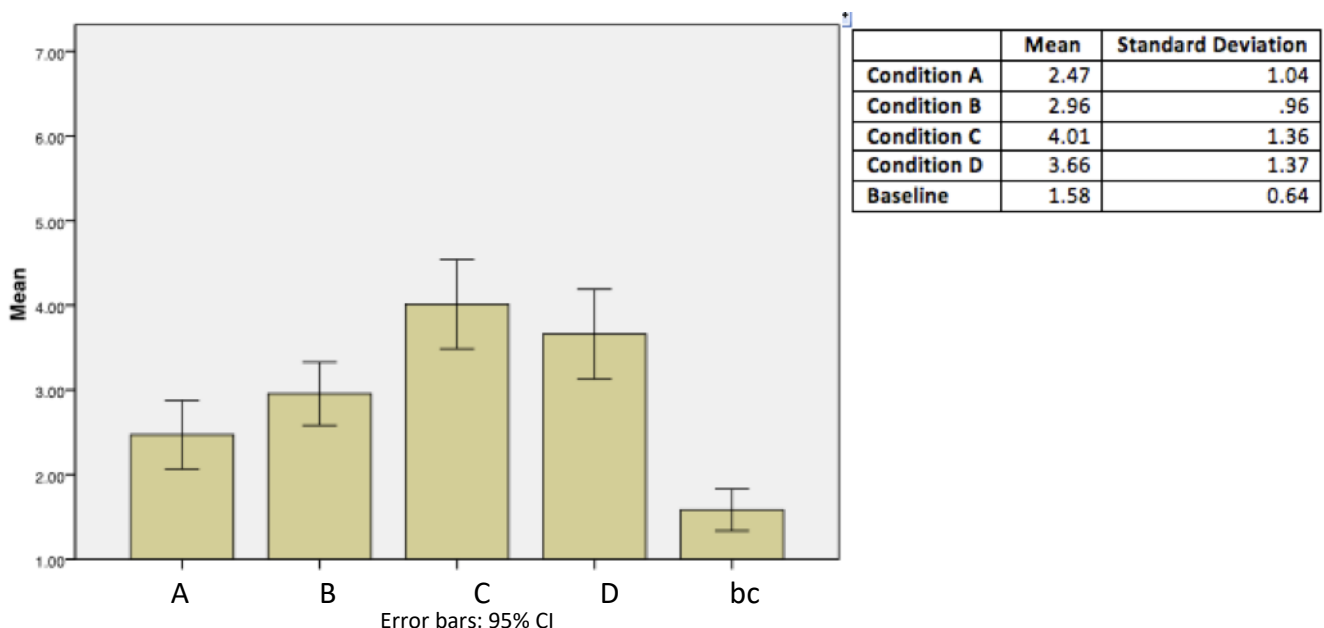
A = Condition A (different subject / type A verb); B = Condtion B (different subject / type C verb); C = Condition C (same subject / type A verb); D = Condition D (same subject / type C verb); bc = baseline.

Fig.6.2. Chart showing results of experiment 2: mean score of items in each condition, with 95% confidence interval error bars. Table showing mean scores and standard deviation for each condition.

A factorial repeated measures ANOVA conducted using for conditions A–D by participant confirms that the factor of subject is significant (F(1,27) =25.2, $p < .001$) and that there is in interaction of subject and verb (F(1,27) = 8.46, $p < .05$), but verb type was not a significant factor (F(1,27) = .182, $p > .10$).

A planned pairwise comparison using the Wilcoxon signed-rank test showed condition A versus B narrowly failed to reach significance ($z = -1.9$, $p = .057$). There is no significant difference between conditions C and D, but there is between A and C, and B and D (Fig.6.3.). All are significantly different from the baseline condition (fillers with *too*).

	Cond. B – Cond. A	Cond. C – Cond. A	Cond. D – Cond.	Cond. D – Cond.	baseline –Cond. A	baseline – Cond.	baseline – Cond.	baseline – Cond.

			C	B		B	C	D
z	-1.900[a]	-4.084[a]	-1.540[b]	-2.644[a]	-3.569[b]	-4.334[b]	-4.463[b]	-4.331[b]
p	= .057	< .001	> .10	< .05	< .001	< .001	< .001	< .001

Fig.6.3. Results of Wilcoxon signed-rank test of planned comparisons. Cond. A = different subject / verb type A; Cond. B = different subject / verb type C; Cond. C = same subject / verb type A; Cond. D = same subject / verb type C. (a. Based on negative ranks; b. Based on positive ranks)

The low mean of the fillers with *too* also suggests it is unlikely that participants were accommodating some eventuality before the scenario to allow a repetitive reading with the same subject in conditions A and B. The low score for condition A also supports this inference.

6.4. Discussion of results

These findings show that 'intermediate' readings, in which only the action is repeated but not the subject, are less acceptable than standard repetitive ones, but the intermediate reading with type C verbs (condition B) was more acceptable than that with type A verbs (condition A), although the difference narrowly failed to reach significance. All conditions are more acceptable than the baseline condition.

This may be support for my adaptation of Klein's model, which would allow an intermediate reading with type C but not type A verbs, as the former have two AT-variables with *again* scoping only over the AT-variable filled by the object in intermediate readings. This would suggest that von Stechow's account overgenerates in allowing four positions, and therefore readings, for *again*. However, given that condition A is also significantly more acceptable than the baseline condition, this cannot be concluded with certainty.

The lower acceptability of condition B versus D may be the result of some pragmatic factor, such as the likelihood of the discourse, or the placement of focus. For instance, if the predicate is focused and focus is not projected to the subject as the sentence is processed, this is pragmatically odd where the subject in the *again* sentence differs from that of its antecedent and is new information. What might more naturally result from general principles of focus in these conditions is a complex pattern of multiple focus, with focus on both the subject and predicate, as both have alternative sets which find their value in the preceding utterance, e.g.:
(6.2) The recital began. Sue played the piano, then Anthony read poetry, and then DORIS played the PIANO again.

A difference between conditions A and B may also be masked by the low acceptability overall. It is somewhat surprising that even items in conditions C and D have means of 4.01 and 3.66 respectively; these were expected to be completely acceptable. One possibility is that the combination of focused predicate and repetitive reading is lowering acceptance, although there is an independent reason for the predicate to be focused – contrast with the predicate in the prejacent utterance. Experiment 1 indicated that when the 'normal' co-occurrence of focused *again* with repetitive reading is not present, acceptability judgement in the task tends to be lower.

It is clear that further work is needed to confirm the availability of intermediate reading(s). In particular, this experiment could be extended by adding focus as a third factor, to establish whether focused *again* or predicate does indeed affect acceptability of intermediate and repetitive readings of *again* with type A and C verbs, and has contributed to the overall low acceptance of items in this experiment. In addition, elicited production techniques and corpus studies could be used to test the occurrence of intermediate readings in natural discourse.

7. Conclusion

This study set out to 'disambiguate' some aspects of the case of *again*. I have argued that the account of *again* suggested by Klein (2001) and Beck (2006) is more promising than the standard 'lexical' and 'structural' accounts because it includes:

- an underspecified meaning, 'and this not for the first time, of relevant topic times', applicable in all uses of *again* – 'this' may apply to a whole sentence, a predicate, part of a verb's meaning, or a mention at discourse level;

- a presuppositional element of *again*'s meaning that is limited to topic times, providing the correct constraints on felicitous utterances;

- an explanation of how focus interacts with *again*, based on Rooth's (1992) Alternative Semantics and how it contributes to disambiguation in context and to accommodation in 'out-of-the-blue' situations;

- a notion of contrast which may be inferred pragmatically given discourse context and focus.

I have shown how this account may be applied to a wide range of data, in particular by:

- applying Klein's (2010) theory with AT-variables to examples with verb types A and D (e.g., *be* + locative; *open*) already discussed in Klein (2001) and Beck (2006);

- showing how this model may be extended to account for verb types B and C (e.g., *wake up*, *sing opera*) and for 'counterdirectionals' such as *fall*, while raising questions about the Kleinian analysis of semelfactives and *stay*-type verbs and about creation verbs with *again*;

- suggesting two further verb types E and F (e.g., *give*, *put on*) and their modification by *again;*

- exploring the interaction of *again* with grammatical aspect in English, suggesting an explanation for its affect with the present imperfective and perfective.

I tested Beck's (2006) proposal for the pragmatic role of focus in disambiguating *again* experimentally, and the findings supported the notion of independent resolution of the presuppositions of focus and *again* in context. However, where the presuppositions of focus and *again* do not coincide in the usual way, or the discourse structure itself is unusual in terms of frequency of occurrence in natural discourse, this is perceived as unusual by hearers.

I also devised a way of testing the availability of an intermediate reading, using type A and C verbs with differing subjects in the *again* sentence and its antecedent in the discourse. The

results might indicate that intermediate readings are marginally available, more so with type C verbs than type A, which would favour my proposal within Klein's (2001, 2010) framework over von Stechow's (1996, 2003) decomposition in the syntax. However, further investigation is needed to clarify these findings.

The theoretical analysis and novel empirical evidence contribute to a pragmatic understanding of *again* in which it has underspecified semantics in the spirit of Klein (2001), and its use by the speaker and disambiguation by the hearer is determined by the type of modified expression, word order, focus stress and, importantly, discourse context, as outlined in Fig.7.1.

Modified expression
- type B or D verb > ambiguity
- type A or C verb > repetitive
- different subject from antecedent > intermediate
- indefinite subject or object > specifity ambiguity

Discourse context
- antecedent topic times meeting the presuppositions of focus and *again*
- accommodation of *again*'s presupposition if not met in context

Again
'and this not for the first time (of relevant times)'

Tense and aspect

Word order
- sentence-initial or post-subject > repetitive only
- sentence-final > possible ambiguity

Focus stress
- focused predicate > alternative *V-ed*
- focused *again* > alternative Ø

Fig.7.1. Summary of factors contributing to the disambiguation of *again*.
This is in no way meant to represent the process of disambiguation: no attempt has been made to order the factors. It simply demonstrates that disambiguation involves many factors which interact with each other.

In general, further work, besides that suggested in Ch.5 and Ch.6, could investigate use of *again* with creation verbs and *again*'s interaction with tense, mood and aspect. This study was limited to English, though drawing on work on German *wieder*; cross-linguistic comparison would also be of interest, and could be a testing ground for Klein's (2001) Basic Time Structure and its application to *again*.

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Appendix I

Items for experiment 1

close	Focused predicate	Focused again
Rep. context	Ben closed the window, but Sally opened it, so Ben again CLOSED it.	Ben closed the window, but Sally opened it so Ben closed it AGAIN.
Rest. context	Ben was in his room. He opened the window, and then he CLOSED it again.	Ben was in his room. The window had been closed this morning. This afternoon Ben closed the window AGAIN.

Condition D follow-up question:
a. Ben closed the window some time ago, perhaps yesterday, so it was closed this morning. Then it opened somehow. Then, this afternoon, Ben closed it.
b. The window was closed this morning. Then it opened somehow. Then, this afternoon, Ben closed it.

tidy up	Focused predicate	Focused *again*
Rep. context	Dave tidied up the lounge, but then it got messy, so Dave again TIDIED it up.	Dave tidied up the lounge, but then it got messy, so he tidied it up AGAIN.
Rest. context	Dave was at home. He made the lounge messy, so he TIDIED it up again.	Dave was at home all day. The lounge had been tidy in the morning. In the afternoon, Dave tidied it up AGAIN.

Condition D follow-up question:
a. This morning Dave's lounge was tidy. Then it somehow got messy. Then, in the afternoon, Dave tidied it up.
b. Dave had tidied his lounge up on another day, so it was tidy in the morning. Then it somehow got messy. Then, in the afternoon, Dave tidied it up.

Paint white	Focused predicate	Focused *again*
Rep. context	Mavis painted her kitchen wall white, but it got grubby, so she again PAINTED it WHITE.	Mavis painted her kitchen wall white, but it got grubby, so she painted it white AGAIN.
Rest. context	Mavis was doing some decorating. Her kitchen wall was grubby, so she PAINTED it WHITE again.	Mavis was doing some decorating. Her kitchen wall had been white last year, and this year she painted it white AGAIN.

Condition D follow-up question:
a. Mavis had painted her kitchen wall white a while ago. Then it perhaps got grubby. Then this year she painted it white.
b. Mavis' kitchen wall was white last year. Then it perhaps got grubby. Then this year she painted it white.

put	Focused predicate	Focused *again*
Rep. context	Nicholas put his favourite book on the shelf, then took it off, and then he again PUT it on the shelf.	Nicholas put his favourite book on the shelf, then took it off, and then put it on the shelf AGAIN.
Rest. context	Nicholas was in the library. He took his favourite book off the shelf, then PUT it ON the shelf again.	Nicholas was in the library. His favourite book had been on the shelf this morning, and this afternoon he put it on the shelf AGAIN.

Condition D follow-up question:
a. Nicholas' favourite book was on the shelf in the morning. Then it was taken off the shelf. Then, this afternoon, Nicholas put it back on the shelf.
b. Nicholas had put his favourite book on the shelf before this morning. Then it was taken off the shelf. Then, this afternoon, he put it on the shelf.

empty	Focused predicate	Focused *again*
Rep. context	Sharon emptied the bucket, but it filled up in the rain, so Sharon again	Sharon emptied the bucket, but it filled up in the rain, so she emptied it

	EMPTIED it.	AGAIN.
Rest. context	Sharon was washing the car. She filled up her bucket and then she EMPTIED it again.	Sharon was washing the car. Her bucket had been empty before lunch, and after lunch she emptied it AGAIN.

Condition D follow-up question:
a. Sharon emptied her bucket, and so it was empty before lunch. Then she filled it up, and then she emptied it.
b. Sharon's bucket was empty in the morning, then it got filled up, and then, after lunch, Sharon emptied it.

Sort out	Focused predicate	Focused *again*
Rep. context	Frances sorted his files out. Then he got them into a mess. Then he again SORTED them OUT.	Frances sorted his files out. Then he got them into a mess. Then he sorted them out AGAIN.
Rest. context	Frances was in his office. He got his files into a mess, and then SORTED them OUT again.	Frances was in his office. His files had been all in order yesterday. This morning he sorted them out AGAIN.

Condition D follow-up question:
a. Frances had sorted out his files a while ago, so yesterday they were all in order. Then they got into a mess, and then, today, he sorted them out.
b. Frances' files were in order yesterday. Then they somehow got into a mess, and then, today, he sorted them out.

Wipe clean	Focused predicate	Focused *again*
Rep. context	Sarah wiped the table clean, but Mick got it sticky, so Sarah again WIPED it CLEAN.	Sarah wiped the table clean, but Mick got it sticky, so Sarah wiped it clean AGAIN.
Rest. context	Sarah finished her dinner. The table had got sticky, so she WIPED it CLEAN again.	Sarah was doing the housework. The table had been clean this afternoon, and later she wiped it clean AGAIN.

Condition D follow-up question:
a. The table was clean this afternoon. Then it somehow got dirty. Then Sarah wiped it clean.
b. Sarah had wiped the table clean, and so it was clean this afternoon. Then it somehow got dirty. Then she wiped it clean.

stand	Focused predicate	Focused *again*
Rep. context	Liz stood the vase on the table, then picked it up, and then again STOOD it on the table.	Liz stood the vase on the table, then picked it up, and then stood it on the table AGAIN.
Rest. context	Liz was arranging some flowers. She picked the vase up from the table and then STOOD it there again.	Liz was arranging some flowers. The vase had been on the table this morning, and this afternoon she stood it there AGAIN.

Condition D follow-up question:
a. The vase had been on the table this morning, then it somehow got moved, and then, this afternoon, Liz stood it on the table.
b. Liz had stood the vase on the table earlier, so it was on the table this morning. Then it somehow got moved. Then, this afternoon, Liz stood it on the table.

forget	Focused predicate	Focused *again*
Rep. context	Trevor forgot the speaker's name. Then he remembered it. Then he again FORGOT it.	Trevor forgot the speaker's name. Then he remembered it. Then he forgot it AGAIN.
Rest. context	Trevor was introducing a lecture. He knew the speaker's name when he stood up, but then FORGOT it again.	Trevor was introducing a lecture. He didn't know the speaker's name when he stood up, and then he forgot it AGAIN.

Condition D follow-up question:
a. Trevor had known the speaker's name earlier and then he had forgotten it. Then he stood up and still

couldn't remember it. Then he remembered it and forgot it once more.
b. Trevor didn't know the speaker's name when he stood up. Then he remembered it but then forgot it.

Turn off	Focused predicate	Focused *again*
Rep. context	Terry turned off the TV. Then he turned it on. And then he again TURNED it OFF.	Terry turned off the TV. The he turned it on. And then he turned it off AGAIN.
Rest. context	Terry was in the sitting room. He turned on the TV and then TURNED it OFF again.	Terry was in the sitting room. The TV had been off yesterday, and today he turned it off AGAIN.

Condition D follow-up question:
a. Terry's TV was off yesterday. Then it was turned on, and then, today, Terry turned it off.
b. Terry turned the TV off at some point yesterday or earlier, so that it was off yesterday. Then it got turned on, and then, today, Terry turned it off.

Fill full	Focused predicate	Focused *again*
Rep. context	Felix filled his glass full, then drank it dry, then again FILLED it FULL.	Felix filled his glass full, then drank it dry, then filled it full AGAIN.
Rest. context	Felix was at the pub. He drank his glass dry, then FILLED it FULL again.	Felix was at the pub. His glass had been full at 8 o'clock, and at 9 o'clock he filled it full AGAIN

Condition D follow-up question:
a. Felix's glass had been full at 8 o'clock. Then Felix drank it dry, and then at 9 o'clock he filled it full.
b. Felix had filled his glass full before 8 o'clock. Then he drank it dry, and then at 9 o'clock he filled it full.

hang	Focused predicate	Focused *again*
Rep. context	John hung the picture on the wall, then he took it off and then he again HUNG it on the wall.	John hung the picture on the wall, then he took it off, and then he hung it on the wall AGAIN.
Rest. context	John had a beautiful watercolour painting. He took it off the wall, and then HUNG it there again.	John had a beautiful watercolour painting. It had been on the wall last month, and today John hung it there again.

Condition D follow-up question:
a. John's painting was on the wall last month, then it was taken down, and then today John hung it up.
b. John had hung up the painting previously, so that it was hanging on the wall last month. Then it was taken down, and today John hung it up.

plant	Focused predicate	Focused *again*
Rep. context	Ben planted his new cherry tree, then dug it up, and then again PLANTED it.	Ben planted his new cherry tree, then dug it up, and then planted it AGAIN.
Rest. context	Ben was doing some gardening. He dug up his cherry tree, and then PLANTED it again.	Ben was doing some gardening. His cherry tree had been in the ground yesterday, and today he planted it AGAIN.

Condition D follow-up question:
a. Ben's cherry tree was firmly planted in the ground yesterday, then it got dug up, and today Ben planted it back in the ground.
b. Ben had planted his cherry tree a while ago. It was in the ground yesterday, then it got dug up, and then today Ben planted it back in the ground.

blew up	Focused predicate	Focused *again*
Rep. context	Bob blew up his rubber dinghy, but it deflated, so he again BLEW it UP.	Bob blew up his rubber dinghy, but it deflated, so he blew it up AGAIN.

Rest. context	Bob was at the beach. His rubber dinghy deflated, so he BLEW it UP again.	Bob was at the beach. His rubber dinghy had been inflated this morning, and after lunch he blew it up AGAIN.

Condition D follow-up question:

a. Bob had inflated his dinghy earlier, so that it was inflated this morning. Then it got deflated and then, after lunch, Bob inflated it.

b. Bob's dinghy was inflated this morning. . Then it got deflated and then, after lunch, Bob inflated it.

filed smooth	Focused predicate	Focused *again*
Rep. context	Sandra filed her nails smooth, but they became jagged, so she again FILED them SMOOTH.	Sandra filed her nails smooth, but they became jagged, so she filed them smooth AGAIN.
Rest. context	Sandra was in her bathroom. Her nails were jagged so she FILED them SMOOTH again.	Sandra was in her bathroom. Her nails had been smooth last week, and this week she filed them smooth AGAIN.

Condition D follow-up question:

a. Sandra had filed her nails smooth before last week, so that last week they were smooth. Then they got jagged, and then this week she filed them smooth.

b. Last week Sandra's nails were smooth. Then they got jagged, and then this week she filed them smooth.

lay	Focused predicate	Focused *again*
Rep. context	Pat laid the map on the desk, then picked it up, and then she again LAID it on the desk.	Pat laid the map on the desk, then picked it up, and then she laid it on the desk AGAIN.
Rest. context	Pat was planning an expedition. She picked up the map from the desk, and then LAID it there again.	Pat was planning an expedition. The map had been on the desk, and she laid it there AGAIN.

Condition D follow-up question:

a. Pat's map was on the desk. Then it was moved somewhere else, and then Pat laid it on the desk.

b. Pat had laid the map on the desk, so it was on the desk. Then it was moved somewhere else, and then she laid it on the desk.

Fillers

Baseline condition

1	Fred was walking in the countryside. He never had a map, and then he LOST it again.
2	Bill wanted to open his own café but he had never had enough money. Then he OPENED his café again.
3	Barry the blacksmith was in his workshop. He got out a new piece of metal and hammered it flat AGAIN.
4	Mike stood on the stage. He was holding the microphone, and then he picked it up AGAIN.

Almost

More acceptable	Less acceptable
Julie knew she shouldn't open her present before her birthday, but it looked so intriguing. So she ALMOST opened it.	Paul arrived home and untied his shoelaces. He ALMOST undid his shoelaces.
Charlie was doing the cleaning but he wasn't really concentrating. He ALMOST wiped clean the kitchen surfaces.	Shaun cleared up the game and put it away. He ALMOST cleared it up.
Laura was staying in Calais to learn French, but she really didn't like it there. So she ALMOST packed her bags to leave.	Charlotte was doing some gardening. She poured *all* the water in the watering can onto the tomato plants. She ALMOST emptied the watering can.
Toby wallpapered his room and then decided he didn't like it. So he almost PAINTED OVER it.	Clara was packing up her lunch. She wanted to pick up an orange, but in her hurry she almost PICKED UP an apple.
Tom opened the window, but Bill found it a bit chilly, so he almost SHUT it.	Paul was visiting a friend and needed to remember the right bus number. He almost REMEMBERED it.
Terry wanted to put on his green sweatshirt, but as it was still dark he almost put his RED one on instead.	Patrick rolled up the rug but then realised that the floor looked bare without it, so he almost unrolled the RUG.
Sarah needed to load the dirty plates into the dishwasher, but she was very tired. So she almost loaded them into the FRIDGE.	Bill had moved house and wanted to decorate his new lounge. He almost painted the LOUNGE yellow.

Always

More acceptable	Less acceptable
John locked the door when he when out and he locked it when he came in. In fact, he ALWAYS locked the door.	Bill opened the window when it was hot but left it shut when it was chilly. He ALWAYS opened the window.
Sarah covered the table with a cloth for breakfast, and she covered it for lunch. She ALWAYS covered the table for meals.	Some evenings Dave was really tired and forgot to switch the TV off. He ALWAYS switched it off.
Fred was going to catch a plane but still wasn't ready to leave the house. He ALWAYS packed up his bags in a great hurry.	Sharon had a shop in Cambridge. She opened it every day of the week. But she always closed it on SUNDAYS.
In the summer Margaret's garden was full of flowers. They looked nice in the garden, but she always put SOME on the mantlepiece.	Some days Ted was so busy that he didn't wipe the table clean after tea. But he always wiped the TABLE clean.
On Saturday Jill and Fred did the housework. Fred wanted to clean the kitchen, while Jill always tidied up the LIVING ROOM.	Sometimes Sally put a vase of flowers on the table and sometimes she put them on the mantlepiece. She always put them on the TABLE.
Mary and John liked to drink port in the evenings. Mary enjoyed half a glass, but John always FILLED his glass FULL.	Paul was expecting some visitors and was tidying up his flat. He always TIDIED things UP at the last minute.
Doris had some pests in her garden. The rabbits nibbled the flowers and the caterpillars always STRIPPED the plants BARE.	Bob had a large library. All the books on his shelves were straight because he always STRAIGHTENED them OUT.

Too

More acceptable	Less acceptable

George the cat was out hunting. He caught a mouse, and then he caught a RAT, too.	Ben was getting ready to go on holiday. He spread his clothes out on the bed, and then packed up his CLOTHES too.
Ben got up early in the morning. He took out the wheelie-bin, and then he took out the RECYCLING BOX, too.	Laura took a nice picture. She printed it out, and then hung IT up, too.
Tracy liked doing DIY. She made a cupboard, and she PAINTED it BLUE, too.	Kevin was putting up a tent. He attached the guide ropes, and then pulled THEM tight, too.
Ben was expecting a visit from his parents. So he hoovered his room and TIDIED it UP, too.	Brenda and Dave were on the beach. Brenda found a starfish, and Dave FOUND one too.
Hannah and Derek were at a picnic. Hannah put her food down on the rug, and Derek put his there, TOO.	Andy and Matt were at the swimming pool. Andy dived in the deep end, and Matt inflated his rubber ring TOO.
Amy and Martha were in a woodwork lesson. Amy sanded her wood smooth, and Martha sanded hers smooth, TOO.	Mary and Beth were camping. Mary found a good site, and Beth, TOO, set up the tent.
Sue and Sarah were having a bad day. First Sue lost her handbag, and then Sarah, TOO, lost hers.	Jake and Liz wanted to play a board game. Jake set up the pieces, and Liz, TOO, remembered the rules.

Follow-up questions for fillers

1. Bob had a large library. All the books on his shelves were straight because he always STRAIGHTENED them OUT.
   a. Bob had a large library. Whenever the books in Bob's library were not straight, he straightened them out.
   b. Bob had a large library. He was constantly straightening out the books.

2. Sarah covered the table with a cloth for breakfast, and she covered it for lunch. She ALWAYS covered the table for meals.
   a. Sarah covered the table with a cloth for every breakfast and every lunch.
   b. Sarah covered the table with a cloth for every breakfast, lunch and dinner.

3. Kevin was putting up a tent. He attached the guy ropes, and then pulled THEM tight, too.
   a. Kevin was putting up a tent. He pulled it tight, then he attached the guy ropes and then he pulled the guide ropes tight.
   b. Kevin was putting up a tent. He attached the guy ropes and then he pulled the guy ropes tight as well.

4. Terry wanted to put on his green sweatshirt, but as it was still dark he almost put his RED one on instead.
   a. Terry wanted to put on his green sweatshirt and he put it on.
   b. Terry wanted to put on his green sweatshirt but he put on a red one instead.

Practice items

1	Tom's friends didn't like muesli, but they did like toast, so they almost ATE UP all his bread.	acceptable
2	Ed and Alan were at a party. Ed filled his bowl with pudding, and Alan filled his bowl TOO.	acceptable
3	Amy and Anne were at a party. Amy filled her glass with orange juice, and Anne FILLED her glass, too.	unacceptable
4	Chris was dog-sitting. Polly the poodle got wet, so Chris RUBBED her DRY again.	acceptable
5	Tom wanted to close the door but he got distracted on the way. So he almost CLOSED it.	unacceptable

Appendix II

Example of experiment 1

Instructions

This survey is looking at word order and stress in English.

It is for native speakers of British English. If your mother tongue is not British English, please do not continue with this survey.

You will hear three short sentences, or phrases, which describe a scenario. Please say how comfortable you are with the third sentence and the way in which it is said, in the context of the scenario.
Give it a rating from 1 to 7, where:
1 = 'very uncomfortable, sounds distinctly odd, I would never say it in this way',
7 = 'very comfortable, sounds completely natural, I would say it like this myself'.

1	2	3	4	5	6	7

very uncomfortable   moderately comfortable   very comfortable

For example, if you've heard

Jenny finished the gardening. She picked up the rake, and she put it in the shed, too.

You would indicate how comfortable you are with "*and she put it in the shed, too."*

You may replay each scenario a second time, if you wish, although those who tried out the task found they mostly did not need to do this.

Please give your immediate, intuitive reaction to the third sentence in each case; don't spend too long thinking about it!

After a few of the scenarios you will also be asked an additional question to find out how you understood those sentences. These questions have a multiple choice answer. Please select one answer.
The first five scenarios are practice scenarios, so that you can get the feel of the task. If you have any questions after these five scenarios, then please contact me!

At the end you will be asked some information about yourself, but responses will be stored anonymously.
Thank you very much for your participation!

Practice items

1	Tom's friends didn't like muesli, but they did like toast, so they almost ATE UP all his bread.
2	Ed and Alan were at a party. Ed filled his bowl with pudding, and Alan filled his bowl TOO.
3	Amy and Anne were at a party. Amy filled her glass with orange juice, and Anne FILLED her glass, too.
4	Chris was dog-sitting. Polly the poodle got wet, so Chris RUBBED her DRY again.
5	Tom wanted to close the door but he got distracted on the way. So he almost CLOSED it.

Task

1	Julie knew she shouldn't open her present before her birthday, but it looked so intriguing. So she ALMOST opened it.
2	Ben was getting ready to go on holiday. He spread his clothes out on the bed, and then packed up his CLOTHES too
3	Ben closed the window, but Sally opened it, so Ben again CLOSED it.
4	John locked the door when he when out and he locked it when he came in. In fact, he ALWAYS locked the door.
5	Sharon emptied the bucket, but it filled up in the rain, so she emptied it AGAIN.

6	Bob had a large library. All the books on his shelves were straight because he always STRAIGHTENED them OUT.
	Q: a. Bob had a large library. Whenever the books in Bob's library were not straight, he straightened them out. b. Bob had a large library. He was constantly straightening out the books.
7	George the cat was out hunting. He caught a mouse, and then he caught a RAT, too.
8	Bill had moved house and wanted to decorate his new lounge. He almost painted the LOUNGE yellow.
9	Trevor was introducing a lecture. He knew the speaker's name when he stood up, but then FORGOT it again.
10	Sue and Sarah were having a bad day. First Sue lost her handbag, and then Sam, TOO, lost hers.
11	Ben was doing some gardening. His cherry tree had been in the ground yesterday, and today he planted it AGAIN.
	Q: a. Ben's cherry tree was firmly planted in the ground yesterday, then it got dug up, and today Ben planted it back in the ground. b. Ben had planted his cherry tree a while ago. It was in the ground yesterday, then it got dug up, and then today Ben planted it back in the ground.
12	Jake and Liz wanted to play a board game. Jake set up the pieces, and Liz, TOO, remembered the rules.
13	Doris had some pests in her garden. The rabbits nibbled the flowers and the caterpillars always STRIPPED the plants BARE.
14	Fred was walking in the countryside. He never had a map, and then he LOST it again.
15	Sarah needed to load the dirty plates into the dishwasher, but she was very tired. So she almost loaded them into the FRIDGE.
16	Mike opened the window when it was hot but left it shut when it was chilly. He ALWAYS opened the window.
17	Frances sorted his files out. Then he got them into a mess. Then he sorted them out AGAIN.
18	Laura took a nice picture. She printed it out, and then hung IT up, too.
19	Paul arrived home and untied his shoelaces. He ALMOST undid his shoelaces.
20	Bob was at the beach. His rubber dinghy had been inflated this morning, and after lunch he blew it up AGAIN.
	Q: a. Bob had inflated his dinghy earlier, so that it was inflated this morning. Then it got deflated and then, after lunch, Bob inflated it. b. Bob's dinghy was inflated this morning. . Then it got deflated and then, after lunch, Bob inflated it.
21	Paul was expecting some visitors and was tidying up his flat. He always TIDIED things UP at the last minute.
22	Ben got up early in the morning. He took out the wheelie-bin, and then he took out the RECYCLING BOX, too.
23	Clara was packing up her lunch. She wanted to pick up an orange, but in her hurry she almost PICKED UP an apple
24	Bill wanted to open his own café but he had never had enough money. Then he OPENED his café again.
25	Mary and Beth were camping. Mary found a good site, and Beth, TOO, set up the tent.
26	Sarah covered the table with a cloth for breakfast, and she covered it for lunch. She ALWAYS covered the table for meals.
	a. Sarah covered the table with a cloth for every breakfast and every lunch. b. Sarah covered the table with a cloth for every breakfast, lunch and dinner.
27	Terry was in the sitting room. He turned on the TV and then TURNED it OFF again.
28	Charlie was doing the cleaning but he wasn't really concentrating. He ALMOST wiped clean the kitchen surfaces.
29	Dave tidied up the lounge, but then it got messy, so Dave again TIDIED it up.
30	Sharon had a shop in Cambridge. She opened the shop every day, but she always CLOSED it on Sundays.
31	Amy and Martha were in a woodwork lesson. Amy sanded her wood smooth, and Martha sanded hers smooth, TOO.

32	Kevin was putting up a tent. He attached the guide ropes, and then pulled THEM tight, too.
	a. Kevin was putting up a tent. He pulled it tight, then he attached the guy ropes and then he pulled the guy ropes tight.
	b. Kevin was putting up a tent. He attached the guy ropes and then he pulled the guy ropes tight as well.
33	Mavis painted her kitchen wall white, but it got grubby, so she again PAINTED it WHITE.
34	Tom opened the window, but Bill found it a bit chilly, so he almost SHUT it.
35	On Saturday Jill and Fred did the housework. Fred wanted to clean the kitchen, while Jill always tidied up the LIVING ROOM.
36	Mike printed out a photo. He chose a spot on his notice board, and then pinned it up AGAIN.
37	Shaun cleared up the game and put it away. He ALMOST cleared it up.
38	Tracy liked doing DIY. She made a cupboard, and she PAINTED it BLUE, too.
39	Sometimes Sally put a vase of flowers on the table and sometimes she put them on the mantelpiece. She always put them on the TABLE.
40	Sandra was in her bathroom. Her nails had been smooth last week, and this week she filed them smooth AGAIN.
	Q: a. Sandra had filed her nails smooth before last week, so that last week they were smooth. Then they got jagged, and then this week she filed them smooth.
	b. Last week Sandra's nails were smooth. Then they got jagged, and then this week she filed them smooth.
41	Patrick rolled up the rug but then realised that the floor looked bare without it, so he almost unrolled the RUG.
42	Andy and Matt were at the swimming pool. Andy dived in the deep end, and Matt inflated his rubber ring TOO.
43	Felix was at the pub. He drank his glass dry, then FILLED it FULL again.
44	Laura was staying in Calais to learn French, but she really didn't like it there. So she ALMOST packed her bags to leave.
45	Sarah wiped the table clean, but Mick got it sticky, so Sarah wiped it clean AGAIN.
46	Some evenings Dave was really tired and forgot to switch the TV off. He ALWAYS switched it off.
47	Hannah and Derek were at a picnic. Hannah put her food down on the rug, and Derek put his there, TOO.
48	Fred was going to catch a plane but still wasn't ready to leave the house. He ALWAYS packed up his bags in a great hurry.
49	Pat was planning an expedition. The map had been on the desk, and she laid it there AGAIN.
	Q: a. Pat's map was on the desk. Then it was moved somewhere else, and then Pat laid it on the desk.
	b. Pat had laid the map on the desk, so it was on the desk. Then it was moved somewhere else, and then she laid it on the desk.
50	Charlotte was doing some gardening. She poured *all* the water in the watering can onto the tomato plants. She ALMOST emptied the watering can.
51	In the summer Margaret's garden was full of flowers. They looked nice in the garden, but she always put SOME on the mantelpiece.
52	Brenda and Dave were on the beach. Brenda found a starfish, and Dave FOUND one too.
53	Liz stood the vase on the table, then picked it up, and then stood it on the table AGAIN.
54	Ben was expecting a visit from his parents. So he hoovered his room and TIDIED it UP, too.
55	Some days Ted was so busy that he didn't wipe the table clean after tea. But he always wiped the TABLE clean.
56	Barry the blacksmith got out a new piece of metal. It was nice and flat, and he hammered it flat AGAIN.
57	Terry wanted to put on his green sweatshirt, but as it was still dark he almost put his RED one on instead.
	a. Terry wanted to put on his green sweatshirt and he put it on.
	b. Terry wanted to put on his green sweatshirt but he put on a red one instead.
58	John had a beautiful watercolour painting. He took it off the wall, and then HUNG it there again.
59	Paul was visiting a friend and needed to remember the right bus number. He almost REMEMBERED

	it.
60	Mary and John liked to drink port in the evenings. Mary enjoyed half a glass, but John always FILLED his glass FULL.
61	Nicholas put his favourite book on the shelf, then took it off, and then he again PUT it on the shelf.
62	Toby wallpapered his room and then decided he didn't like it. So he almost PAINTED OVER it.

Appendix III

Items for experiment 2

	type A	type C
same subject	The recital began. Sue played, then Anthony read, and then Doris played again.	The recital began. Sue played the piano, then Anthony read poetry, and then Doris played the piano again.
different subject	The recital began. Sue played, then Anthony read, and then Sue played again.	The recital began. Sue played the piano, then Anthony read poetry, and then Sue played the piano again.

	type A	type C
same subject	Sue, Anthony and Doris sat down to lunch. Sue ate, then Anthony drank, and then Doris ate again.	Sue, Anthony and Doris sat down to lunch. Sue ate curry, then Anthony drank beer, and then Doris ate curry again.
different subject	Sue and Anthony sat down to lunch. Sue ate, then Anthony drank, and then Sue ate again.	Sue and Anthony sat down to lunch. Sue ate curry, then Anthony drank beer, and then Sue ate curry again.

	type A	type C
same subject	Charles, David and Sam went to an art masterclass. Charles sculpted, then David drew, and then Sam sculpted again.	Charles, David and Sam went to an art masterclass. Charles sculpted limestone, then David drew still life, and then Sam sculpted limestone again.
different subject	Charles and David went to an art masterclass. Charles sculpted, then David drew, and then Charles sculpted again.	Charles and David went to an art masterclass. Charles sculpted limestone, then David drew still life, and then Charles sculpted limestone again.

	type A	type C
same subject	Ed, Nick and Mark were waiting for their train. Ed hummed, then Nick whistled, then Mark hummed again.	Ed, Nick and Mark were waiting for their train. Ed hummed the Beatles, then Nick whistled Bach, then Mark hummed the Beatles again.
different subject	Ed and Mark were waiting for their train. Ed hummed, then Mark whistled, then Ed hummed again.	Ed and Mark were waiting for their train. Ed hummed the Beatles, then Mark whistled Bach, then Ed hummed the Beatles again.

	type A	type C
same subject	Ted, Tom and Toby were in a circus show. Ted juggled, then Tom drummed, and then Toby juggled again.	Ted, Tom and Toby were in a circus show. Ted juggled oranges, then Tom did some drumming, and then Toby juggled oranges again.
different subject	Ted and Toby were in a circus show. Ted juggled, then Tom drummed, and then Ted juggled again.	Ted and Toby were in a circus show. Ted juggled oranges, then Toby did some drumming, and then Ted juggled oranges again.

	type A	type C
same subject	Sue, Paul and Vicky went to the beach for a day. Sue sailed, then Paul read, and then Vicky sailed again.	Sue, Paul and Vicky went to the beach for a day. Sue sailed their dinghy, then Paul read fantasy, and then Vicky sailed their dinghy again.

different subject	Sue and Paul went to the beach for a day. Sue sailed, then Paul read, and then Sue sailed again.	Sue and Paul went to the beach for a day. Sue sailed their dinghy, then Paul read fantasy and then Sue sailed their dinghy again.

	type A	type C
same subject	Doris, Mavis and Flora met for a craft afternoon. Doris sewed, then Mavis knitted, then Flora sewed again.	Doris, Mavis and Flora met for a craft afternoon. Doris sewed cross-stitch, then Mavis knitted socks, and then Flora sewed cross-stitch again.
different subject	Doris and Mavis met for a craft afternoon. Doris sewed, then Mavis knitted, then Doris sewed again.	Doris and Mavis met for a craft afternoon. Doris sewed cross-stitch, then Mavis knitted socks, and then Doris sewed cross-stitch again.

	type A	type C
same subject	Charlie, Emily and Ben went to the seaside. Charlie sailed, then Emily swam, and then Ben sailed again.	Charlie, Emily and Ben went to the seaside. Charlie sailed their boat, then Emily did some swimming, and then Ben sailed their boat again.
different subject	Charlie and Ben went to the seaside. Charlie sailed, then Ben swam, and then Charlie sailed again.	Charlie and Ben went to the seaside. Charlie sailed their boat, then Ben did some swimming, and then Charlie sailed their boat again.

	type A	type C
same subject	Tim, Nigel and Ben went to work in the library. Tim wrote, then Nigel revised, and then Ben wrote again.	Tim, Nigel and Ben went to work in the library. Tim wrote poetry, then Nigel revised chemistry, and then Ben wrote poetry again.
different subject	Tim and Nigel went to work in the library. Tim wrote, then Nigel revised, and then Tim wrote again.	Tim and Nigel went to work in the library. Tim wrote poetry, then Nigel revised chemistry, and then Tim wrote poetry again.

	type A	type C
same subject	The long wait for the bus began. Greg whistled, then Paul scribbled, and then Amy whistled again.	The long wait for the bus began. Greg whistled folktunes, then Paul scribbled cartoons, and then Amy whistled folktunes again.
different subject	The long wait for the bus began. Greg whistled, then Paul scribbled, and then Greg whistled again.	The long wait for the bus began. Greg whistled folktunes, then Paul scribbled cartoons, and then Greg whistled folktunes again.

	type A	type C
same subject	Philip, Laura and Jane had a quiet Saturday at home. Philip practised, then Laura wrote, and then Jane practised again.	Philip, Laura and Jane had a quiet Saturday at home. Philip practised the flute, then Laura wrote fiction, and then Jane practised the flute again.
different subject	Philip and Laura had a quiet Saturday at home. Philip practised, then Laura wrote, and then Philip practised again.	Philip and Laura had a quiet Saturday at home. Philip practised the flute, then Laura wrote fiction, and then Philip practised the flute again.

	type A	type C

same subject	Ted, Bill and Nigel started to build a conservatory. Ted dug, then Bill hammered, then Nigel dug again.	Ted, Bill and Nigel started to build a conservatory. Ted dug trenches, then Bill hammered at some beams, then Nigel dug trenches again.
different subject	Ted and Bill started to build a conservatory. Ted dug, then Bill hammered, then Ted dug again.	Ted and Bill started to build a conservatory. Ted dug trenches, then Bill hammered at some beams, then Ted dug trenches again.

	type A	type C
same subject	Some friends were putting on a concert. Ollie sang, then Trevor recited, and Sophie sang again.	Some friends were putting on a concert. Ollie sang opera, then Trevor recited verse, then Sophie sang opera again.
different subject	Some friends were putting on a concert. Ollie sang, then Trevor recited, and Ollie sang again.	Some friends were putting on a concert. Ollie sang opera, then Trevor recited verse, and then Ollie sang opera again.

	type A	type C
same subject	Dan, Matt and David went to the library. Dan revised, then Matt typed, then David revised again.	Dan, Matt and David went to the library. Dan revised Dickens, Matt typed notes, then David revised Dickens again.
different subject	Dan and Matt went to the library. Dan revised, then Matt typed, then Dan revised again.	Dan and Matt went to the library. Dan revised Dickens, then Matt typed notes, then Dan revised Dickens again.

	type A	type C
same subject	Angela, Mark and Amy went to an art lesson. Angela sketched, then Mark painted, and then Amy sketched again.	Angela, Mark and Amy went to an art lesson. Angela sketched houses, then Mark painted flowers, and then Amy sketched houses again.
different subject	Angela and Amy went to an art lesson Angela sketched, then Amy painted, and then Angela sketched again.	Angela and Amy went to an art lesson Angela sketched houses, then Amy painted flowers, and then Angela sketched houses again.

	type A	type C
same subject	It was the day of the concert. Patrick rehearsed, then Matt practised, then Dave rehearsed again.	It was the day of the concert. Patrick rehearsed the choir, then Matt practised the cello, then Dave rehearsed the choir again.
different subject	It was the day of the concert. Patrick rehearsed, then Matt practised, then Patrick rehearsed again.	It was the day of the concert. Patrick rehearsed the choir, then Matt practised the cello, then Patrick rehearsed the choir again.

Fillers

Too

More acceptable	Unacceptable (also baseline condition)
Emma, Laura and Liz were in the park. Emma read poetry, Laura played tennis and Liz did too.	Three friends were at the beach. Tom swam, Kylie sunbathed, and Ed, too, ate ice cream.
The three sisters were very sporty. Amy swam, Mary rowed, and Jane rowed, too.	Sheila, Pat and Jane met for tea. Sheila chatted, Pat listened, and Jane, too, knitted.
The dinner party was over. Sam washed up, Ben tidied up and Tom did too.	It was a Saturday night. Ed slept, Anne read, and Bob, too, sang.
Jane was shopping for a birthday present. She found a nice book, bought a card, and chose some	Ed was in an art lesson. He did a sketch, and he chose his colours, and he, too, painted a picture.

wrapping paper, too.	
Alison had a new garden. She dug the flower beds, bought some flowers, and planted them, too.	Dan was studying in his room. He read his textbook, then he made notes, then he, too, wrote an essay.
Mark was a very busy man. He worked, and he painted, and he rowed too.	Sarah was preparing for a party. She baked, then she tidied, and she, too, hoovered.

Always

More acceptable	Less acceptable
Nick loved music. He played the bassoon, sang in a choir, and always watched opera on Saturdays.	Kate was a film-lover. Sometimes she went to the cinema and sometimes she watched films at home, but she always went to the cinema.
Ben wanted to study English. He watched plays, wrote poetry and always read the latest novels.	Nigel was a keen sportsman. He ran marathons, and he climbed mountains and he played tennis always.
Mary, Jane and Tim went to the pool. Mary practised diving and Jane swam breaststroke, but Tim always sat on the side.	Ellie and Sarah had a hamster. On Tuesdays Ellie cleaned out its cage and on Fridays Sarah did, but Ellie always did.
Dave and Mike were living away from home. Dave emailed friends every day and telephoned them at the weekend, but Mike always wrote letters instead.	Matt and Dan shared a house. Matt washed up the dishes and Dan dried them, but Matt always dried.
John, James and Ed put on a concert every month. John played the clarinet and James sang, and Ed always accompanied.	James and Mary had two children. On Fridays Mary went to aerobics and James stayed at home, and he slept always.
Sarah liked doing craft. She crocheted, knitted, and always sewed in the evenings.	Anne was very creative. She drew, and she painted, and she sang always.

Almost

More acceptable	Less acceptable
Jane relaxed at home on Sunday. She did some painting, had a snooze, and almost read a whole novel.	On Monday Ben was in his room. He wrote an essay, sent an email, and watched a programme almost.
Tom had the day off work. He found his map, packed a picnic and almost walked ten miles.	Ben was ill. He lay on the sofa, watched an entire series, and almost finished the series.
Ed, Tom and George wanted to build a new shed. Ed dug the foundations, Tom made the roof, and George almost painted the sides.	Nick, Paul and Chris were climbing a mountain. Nick got halfway up, Paul reached the top, and Chris did almost.
Liz was at the theatre. She watched the first act, but was bored in the second, so almost fell asleep.	Charlotte was walking by the river. It was muddy, so she skidded and fell over almost.
Ben was in a race. He started well, ran fast and almost won.	Trevor was in a show. He sang, he played the trumpet and he almost sang.
Nick and Ben were at a party. The music was catchy, so Ben danced and Nick almost did.	Frances and Brendan wanted to bake a cake. They bought the ingredients, and Frances read the instructions while Brendan followed them almost.

Practice items

1	Gemma and Anna went shopping. Gemma spotted a nice hat and bought a new dress, and Anna did, too.
2	Dan and Ben were in a play. Dan acted, then Ben danced, then Dan acted again.
3	Cheryl was having a busy day. She cleaned the car, then visited a friend, then almost cleaned the car.
4	Nick, Ellie and Hannah were in the countryside. Nick spotted a deer, then Ellie saw a rabbit, and Hannah, too, enjoyed the sunshine.
5	Nathan liked art. He painted, did pottery, and always visited a museum on Saturdays.

Appendix IV

Example of experiment 2

Instructions

This survey is for native speakers of British English. If your mother tongue is not British English, please do not continue with this survey.

You will hear two sentences which describe a scenario. The first sentence sets the scene, and the next describes three facts or things that happened. Please say how comfortable you are with the last phrase, which describes the third fact or thing which happened, in the context of the scenario.

Give it a rating from 1 to 7, where:
1 = 'very uncomfortable, sounds distinctly odd',

7 = 'very comfortable, sounds completely natural'.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| very uncomfortable | | | moderately comfortable | | | very comfortable |

For instance, if you've heard:

Emma, Angela and Kate were in the garden. Emma mowed the lawn, Angela pruned the hedge, and Kate almost planted a row of cabbages.

You would indicate how comfortable you are with the phrase "*and Kate almost planted a row of cabbages"*.

You may replay a sentence if you need, although those who tried out the task found they mostly did not need to do this.

Give your immediate, intuitive reaction; don't spend too long thinking about it!

The first five items are practice items, and they should give you a feel for the task.
If you need to take a break during the task, feel free to do so.

At the end you will be asked some information about yourself, but responses will be stored anonymously.
Many thanks for your participation!

Practice items

1	Gemma and Anna went shopping. Gemma spotted a nice hat and bought a new dress, and Anna did, too.
2	Dan and Ben were in a play. Dan acted, then Ben danced, then Dan acted again.
3	Cheryl was having a busy day. She cleaned the car, then visited a friend, then almost cleaned the car.
4	Nick, Ellie and Hannah were in the countryside. Nick spotted a deer, then Ellie saw a rabbit, and Hannah, too, enjoyed the sunshine.
5	Nathan liked art. He painted, did pottery, and always visited a museum on Saturdays.

Task

1	Nick loved music. He played the bassoon, sang in a choir, and always watched opera on Saturdays.
2	Charlotte was walking by the river. It was muddy, so she skidded and fell over almost.
3	The recital began. Sue played, then Anthony read, and then Doris played again.
4	Emma, Laura and Liz were in the park. Emma read poetry, Laura played tennis and Liz did too.
5	Ted, Tom and Toby were in a circus show. Ted juggled oranges, then Tom did some drumming, and then Toby juggled oranges again.
6	Jane relaxed at home on Sunday. She did some painting, had a snooze, and almost read a whole novel.
7	Anne was very creative. She drew, and she painted, and she sang always.
8	Tim and Nigel went to work in the library. Tim wrote, then Nigel revised, and then Tim wrote again.
9	Three friends were at the beach. Tom swam, Kylie sunbathed, and Ed, too, ate ice cream.
10	Nick and Ben were at a party. The music was catchy, so Ben danced and Nick almost did.
11	Sarah liked doing craft. She crocheted, knitted, and always sewed in the evenings.
12	Some friends were putting on a concert. Ollie sang opera, then Trevor recited verse, and then Ollie sang opera again.
13	Tom had the day off work. He found his map, packed a picnic and almost walked ten miles.
14	Sarah was preparing for a party. She baked, then she tidied, and she, too, hoovered.
15	Liz was at the theatre. She watched the first act, but was bored in the second, so almost fell asleep.
16	The long wait for the bus began. Greg whistled, then Paul scribbled, and then Greg whistled again.
17	Nick, Paul and Chris were climbing a mountain. Nick got halfway up, Paul reached the top, and Chris did almost.
18	Sue, Paul and Vicky went to the beach for a day. Sue sailed their dinghy, then Paul read fantasy, and then Vicky sailed their dinghy again.
19	The three sisters were very sporty. Amy swam, Mary rowed, and Jane rowed, too.
20	Kate was a film-lover. Sometimes she went to the cinema and sometimes she watched films at home, but she always went to the cinema.
21	Ed, Tom and George wanted to build a new shed. Ed dug the foundations, Tom made the roof, and George almost painted the sides.
22	Sue, Anthony and Doris sat down to lunch. Sue ate, then Anthony drank, and then Doris ate again.
23	Sheila, Pat and Jane met for tea. Sheila chatted, Pat listened, and Jane, too, knitted.
24	Ben wanted to study English. He watched plays, wrote poetry and always read the latest novels.
25	Trevor was in a show. He sang, he played the trumpet and he almost sang.
26	Dan and Matt went to the library. Dan revised Dickens, then Matt typed notes, then Dan revised Dickens again.
27	The dinner party was over. Sam washed up, Ben tidied up and Tom did too.
28	Doris, Mavis and Flora met for a craft afternoon. Doris sewed cross-stitch, then Mavis knitted socks, and then Flora sewed cross-stitch again.
29	James and Mary had two children. On Fridays Mary went to aerobics and James stayed at home, and he slept always
30	Charles, David and Sam went to an art masterclass. Charles sculpted, then David drew, and then Sam sculpted again.
31	Dan was studying in his room. He read his textbook, then he made notes, then he, too, wrote an essay.
32	John, James and Ed put on a concert every month. John played the clarinet and James sang, and Ed always accompanied.
33	Angela and Amy went to an art lesson Angela sketched houses, then Amy painted flowers, and then Angela sketched houses again.
34	Ben was ill. He lay on the sofa, watched an entire series, and almost finished the series.
35	Mark was a very busy man. He worked, and he painted, and he rowed too.

36	Nigel was a keen sportsman. He ran marathons, and he climbed mountains and he played tennis always.
37	Philip and Laura had a quiet Saturday at home. Philip practised, then Laura wrote, and then Philip practised again.
38	Frances and Brendan wanted to bake a cake. They bought the ingredients, and Frances read the instructions while Brendan followed them almost.
39	Mary, Jane and Tim went to the pool. Mary practised diving and Jane swam breaststroke, but Tim always sat on the side.
40	It was a Saturday night. Ed slept, Anne read, and Bob, too, sang.
41	It was the day of the concert. Patrick rehearsed the choir, then Matt practised the cello, then Patrick rehearsed the choir again.
42	Jane was shopping for a birthday present. She found a nice book, bought a card, and chose some wrapping paper, too.
43	Ed, Nick and Mark were waiting for their train. Ed hummed, then Nick whistled, then Mark hummed again.
44	Ben was in a race. He started well, ran fast and almost won.
45	Matt and Dan shared a house. Matt washed up the dishes and Dan dried them, but Matt always dried.
46	Ed was in an art lesson. He did a sketch, and he chose his colours, and he, too, painted a picture.
47	Ted and Bill started to build a conservatory. Ted dug, then Bill hammered, then Ted dug again.
48	Dave and Mike were living away from home. Dave emailed friends every day and telephoned them at the weekend, but Mike always wrote letters instead.
49	On Monday Ben was in his room. He wrote an essay, sent an email, and watched a programme almost.
50	Charlie, Emily and Ben went to the seaside. Charlie sailed their boat, then Emily did some swimming, and then Ben sailed their boat again.
51	Ellie and Sarah had a hamster. On Tuesdays Ellie cleaned out its cage and on Fridays Sarah did, but Ellie always did.
52	Alison had a new garden. She dug the flower beds, bought some flowers, and planted them, too.

Appendix V

Syntactic Structure of examples in Ch.3.2.

1. *sing*

Mary is singing again.

a. (λe.agent(Mary)(e) & singing(e))(e)**again**
b. agent(Mary)(e) & ((singing)(e)**again**)

a. [$_{AgrS}$ Mary$_1$ [$_{VoiceP}$ t$_1$ [$_{VP}$ sing- **again**] agent]

b. [$_{AgrS}$ Mary$_1$ [$_{VoiceP}$ t$_1$ [$_{VP}$ sing-] agent] **again**]
(Cf. von Stechow, 1996:24)

2. *open the window* (cf. Fig.3.4.)
x open y again

a. λyλx.ACT(x) CAUSE BECOME(open(y)**again**)
b. λyλx.ACT(x) (CAUSE BECOME(open(y))**again**)
c. λyλx.ACT(x) CAUSE (BECOME(open(y))**again**)
d. λyλx.**(**ACT(x) CAUSE BECOME(open(y)))**again**

Fritz opened the window again.

a. [$_{AgrS}$ Fritz$_1$ [$_{AgrO}$ the window$_2$ [$_{VoiceP}$ t$_1$ [$_{Voice}$ CAUSE [$_{VP}$ BECOME [$_{XP}$ t$_2$ OPEN]]]] **again**]
(repetitive)

b. [$_{AgrS}$ Fritz$_1$ [$_{AgrO}$ the window$_2$ [$_{VoiceP}$ t$_1$ [$_{Voice}$ CAUSE [$_{VP}$ BECOME [$_{XP}$ t$_2$ OPEN]]] **again**]]
(intermediate 1)

c. [$_{AgrS}$ Fritz$_1$ [$_{AgrO}$ the window$_2$ [$_{VoiceP}$ t$_1$ [$_{Voice}$ CAUSE [$_{VP}$ BECOME [$_{XP}$ t$_2$ OPEN]] **again**]]]
(intermediate 2)

d. [$_{AgrS}$ Fritz$_1$ [$_{AgrO}$ the window$_2$ [$_{VoiceP}$ t$_1$ [$_{Voice}$ CAUSE [$_{VP}$ BECOME [$_{XP}$ t$_2$ OPEN] **again**]]]]
(restitutive)

(Cf. von Stechow, 2003:419)