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FOCUS ON *AGAIN*

ABSTRACT. This paper examines the effect that focus has on repetitive versus restitutive *again*. It is argued that a pragmatic explanation of the effect is the right strategy. The explanation builds largely on a standard focus semantics. To this we add an anaphoric analysis of *again*'s presupposition and a detailed analysis of the alternatives triggered when focus falls on *again*.

1. INTRODUCTION

This paper investigates a long-standing puzzle in the interpretation of the adverb *again*. *Again* gives rise to the ambiguity described in (2) for the sentence in (1). The two readings differ in their presuppositions.

(1)   I forgot the title again.   (**repetitive/restitutive**)

(2) a.   (1) presupposes that there is a previous time at which I had forgotten the title.
          Then, it is true iff I forgot the title.   (**repetitive**)

    b.   (1) presupposes that there is a previous time at which I had not known the title.
          Then, it is true iff I forgot the title.   (**restitutive**)

It has been pointed out [recently in particular by Fabricius-Hansen (2001), Jäger and Blutner (2000, 2003) and Klein (2001)] that the restitutive reading becomes impossible when *again* is focused, as indicated in (3).

(3)   I forgot the title AGAIN.   (only repetitive)

The question is why focus has such an effect. I provide an answer to this question substantial parts of which are a formal interpretation of ideas presented in Klein (2001). The effect of focus is shown to follow from standard focus interpretation in conjunction with general mechanisms of discourse interpretation. *Again* in (3) is never formally

disambiguated, but the sentence as a whole is only acceptable in an overall repetitive context. The explanation is thus purely pragmatic. A complete analysis of the focus effect data has consequences for our understanding of the presupposition of *again*, and for our view of how various ingredients are woven into a coherent discourse. It also raises some interesting issues pertaining to focus alternatives.

Section 2 recapitulates the core data we will be concerned with and explains why they are an open problem, given what we know about the repetitive/restitutive ambiguity. The analysis is developed in Section 3. Its theoretical consequences regarding the presupposition of *again* and regarding focus related issues are explored in Sections 4 and 5, respectively. Section 6 presents the conclusions.

2. The Problem

2.1. *Focused and Non-focused Again*

The adverb *again* indicates repetition, as illustrated by the simple example below. Thus (4a) is only appropriate if (4b) holds – i.e., (4a) presupposes (4b). The content of (4b) is given slightly more formally in (4c). **t1** stands for the time interval that the sentence (4a) is about (more on this later).

(4) a. John snored again.
    b. John had snored before.
    c. $\exists t'[t' < \mathbf{t1}$ & John snored at $t']$

I adopt a view of presuppositions according to which they are restrictions on appropriate contexts [compare Stalnaker (1973), Heim (1990), Kadmon (2001) among others]. The restriction that (4a) imposes on contexts in which it can be uttered is given in (5a) (informally) and (5b) (more precisely); c is Stalnaker's context set; c entails p iff c is a subset of p.

(5) a. (4a) is only felicitous in a context that entails that John had snored before.
    b. $c \Rightarrow \lambda \mathrm{w}. \exists t'[t' < \mathbf{t1}$ & John snored in w at $t']$.

Again triggers this presupposition, in the way indicated by the lexical entry in (6) [see for example Stechow, 1996; Fabricius-Hansen, 2001; Huitink and van der Sandt, 2003 for discussion; the entry in (6) will serve as a starting point for present purposes]. The definition (6)

entails that the truth value of a sentence containing *again* may be undefined in a world. I take it that a sentence S is felicitous in a context c only if the presuppositions of S are true in all worlds in c; or in other words, S can only be added to c if c entails the presuppositions of S [cf. (7′)]. This is how presupposition as undefinedness in simple sentences is mapped to appropriateness in a context [von Fintel (2003) calls (7′) "Stalnaker's Bridge"]. The application to the example is illustrated in (7); $t1$ is a free time variable that is assigned a time interval by the variable assignment function g; in the example, suppose that is the interval **t1**. Thus (4a) can only be uttered felicitously in context c if (5b) is the case, as desired.

(6) $[\![\text{again}]\!] \, (p_{\langle \tau, \langle s, t \rangle \rangle}) \, (t) \, (w)$
$$= 1 \text{ if } p(t)(w) \ \& \ \exists t'[t' < t \ \& \ p(t')(w)]$$
$$= 0 \text{ if } {\sim}p(t)(w) \ \& \ \exists \, t'[t' < t \ \& \ p(t')(w)]$$
undefined otherwise.

(7) $[\![\, [[[\text{ John snored}] \text{ again }] \, t1 \,]\!]^g \, (w)$ is defined only if
$\exists t'[t' < g(t1) \ \& \ \text{John snored in } w \text{ at } t']$
If defined, it is true iff John snored in w at $g(t1)$.

(7′) p is only felicitous in c if for all $w \in c$: $p(w)$ is defined.

As a general notational convention, I try to use boldface metavariables **t1**, **t2**, etc., for time intervals and regular $t1$, $t2$, etc., as time pronouns in the object language (the linguistic structures of English). *Again* has received a lot of attention in the semantic literature because it gives rise to the so-called repetitive/restitutive ambiguity in combination with certain predicates. The sentence in (8) is a standard example for this ambiguity, described informally in (8'). The repetitive reading is an interpretation that presupposes that the kind of event described by the sentence as a whole has occured before. The restitutive reading is an interpretation that presupposes that the result state of the event described in the sentence has held before. Example (9) is a free range example of the less obvious restitutive reading.

(8)   Otto opened the door again.
(8′) a. (8) presupposes that Otto had opened the door before.
Then, it is true iff Otto opened the door.
= Otto opened the door, and he had done that before.
(repetitive)

b. (8) presupposes that the door had been open before.
Then, it is true iff Otto opened the door.
= Otto opened the door, and the door had been open
before. **(restitutive)**

(9) a. Jack opened his lips to speak, but shut them again, [...]
("Jack and Jill", by Luisa May Alcott; from the Project
Gutenberg offical homesite http://promo.net/pg/)

b. "shut them again" is appropriate because there is a
previous time at which Jack's lips were shut (namely the
beginning of the opening).

This has been perceived as a genuine ambiguity because the weaker
restitutive reading is not always available. Several factors have been
identified and discussed that affect availability of the restitutive read-
ing. One of them is focus. Fabricius-Hansen (1983), Kamp and Ross-
deutscher (1994), Stechow (1996) and others report that the restitutive
reading is lost when *again* is focused, as in (10). Another factor is
syntactic structure, illustrated by the German word order facts in (11).

(10) a. Otto OPENED the door again.   (repetitive/restitutive)
b. Otto opened   the door AGAIN. (repetitive only)

(11) a. (weil) Otto die Tür   wieder öffnete. (repetitive/restitutive)
Otto the door again   opened.

b. (weil) Otto wieder   die Tür   öffnete. (repetitive only)
Otto again   the door   opened.

The word order data have received an analysis in Stechow (1995a,
1996, 2003), Jäger and Blutner (2000, 2003). The focus facts have been
less prominent, but have been examined in Jäger and Blutner (2000,
2003) and in Klein (2001). Klein and Fabricius-Hansen (2001) note
that they go hand in hand with an effect of discourse appropriateness,
illustrated in (12). The second sentences in the two short discourses
cannot be switched. I will concentrate on the focus effect in this paper.

(12) a. Otto closed the door. Ten minutes later, he OPENED it
again.
b. Otto opened the door. Ten minutes later, he opened it
AGAIN.

2.2. *Theories of the Repetitive/Restitutive Ambiguity*

Given the basic semantics assumed for *again* in (6), the question arises how to capture the ambiguity of data like (8). Two kinds of answers exist in the literature. One takes the semantic contribution of *again* to be uniformly as in (6), and analyses the ambiguity as one of scope; I take Stechow (1995a, 1996) as a representative of this approach [see also Klein 2001; Pittner 2003; Stechow 2003]. The other associates more than one interpretation with *again*; Fabricius-Hansen (2001) will be my representative of this strategy (others are Kamp and Rossdeutscher 1994; Jäger and Blutner 2000, 2003). I sketch the basic idea of both below, without going into any technical details.

Application of the structural theory to our central example in (8) is illustrated informally in (13)–(15). Crucial is the decomposition of the transitive verb *open* into the adjective *open* and an agentive empty verb.

(13) a. Otto opened the door.
    b. underlying structure: $[_{VP}$ Otto $[$ Ø$_V$ $[_{SC}$ open$_{Adj}$ [the door]]]]
    c. surface structure: $[_{VP}$ Otto $[$ $[$Ø + open$_{Adj}]_V$ $[_{SC}$ t [the door]]]]

(14) a. $[\![$Ø$_V]\!]$ $=$ $\lambda p \lambda x \lambda t \lambda w.x$ does something in w at t that causes that p comes to be in w at t.
    b. $[\![$SC$]\!]$ $=$ $\lambda t \lambda w.$the door is open in w at t.

(15) $\lambda t \lambda w.$Otto does something in w at t that causes that the door comes to be open in w at t.

Decomposition creates two possible adjunction sites for the adverb *again*, above and below the empty verb. The two structures lead to two different interpretations, paraphrased in (17a, b), which correspond to the repetitive and the restitutive reading, respectively. The ambiguity is thus analysed as a scope ambiguity between *again* and the empty verb.

(16) a. $[_{VP}$ $[_{VP}$ Otto $[$ Ø$_V$ $[_{SC}$ open$_{Adj}$ [the door]]]] again].
    b. $[_{VP}$ Otto $[$Ø$_V$ $[_{SC}$ $[_{SC}$ open$_{Adj}$ [the door]] again]]].

(17) a. Once more, Otto did something that caused the door to become open.
    b. Otto did something that caused the door to become once more open.

The lexical theory, on the other hand, introduces a second interpretation of *again*, a simplified version of which is given in (18). p_c is the predicate that is counterdirectional to the predicate p; examples of such pairs would be the denotations of *fall–rise, open–close, buy–sell*. Our example would be analysed as in (19) and (20).[1]

(18) a. $[\![\text{again1}]\!] \, (p_{\langle \tau, \langle s, t \rangle \rangle}) \, (t) \, (w)$
$= 1$ if $p(t)(w) \ \& \ \exists t' \, [t' < t \ \& \ p(t')(w)]$
$= 0$ if $\sim p(t)(w) \ \& \ \exists t' \, [t' < t \ \& \ p(t')(w)]$
undefined otherwise.

   b. $[\![\text{again2}]\!] \, (p_{\langle \tau, \langle s, t \rangle \rangle}) \, (t) \, (w)$
$= 1$ if $p(t)(w) \ \& \ \exists t' \, [t' < t \ \& \ p_c(t')(w)]$
$= 0$ if $\sim p(t)(w) \ \& \ \exists t' \, [t' < t \ \& \ p_c(t')(w)]$
undefined otherwise.

(19) a. Otto opened the door again.

   b. $\lambda t \lambda w.$Otto opened the door in w at t & $\exists t' \, [t' < t$ & the door closed in w at $t']$.

(20) predicate p: $\lambda t \lambda w.$Otto opened the door in w at t.
       counterdirectional predicate p_c: $\lambda t \lambda w.$the door closed in w at t.

The ambiguity shows up with (basically) accomplishment- and achievement-type predicates, and both analyses predict this: the first through internal semantic complexity required for decomposition, the second through the notion of a counterdirectional predicate. I will remain neutral regarding the question of what the right analysis of example (8) is (see Stechow, 1996, 2003; Jäger and Blutner, 2000, 2003; Fabricius-Hansen, 2001; Pittner, 2003; Beck, 2005a for discussion). I should stress that the presentation of both theories is much simplified. The details do not matter, however. For present purposes, it is important that under both analyses the focus effect is prima facie unexplained. Under the lexical analysis,

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[1] I assume a weak counterdirectional predicate, so that it is not required that Otto closed the door, but that the door closed. This seems empirically appropriate and could be derived from a structure like (i), for example with the help of Kratzer's (1996) vP (see Bale, 2005 for relevant recent discussion).

   (i) [$_{vP}$ Otto [$_{VP}$ [$_{VP}$ the door open$_V$] again]].

it looks as if focus determines which interpretation of the adverb we choose. Under the structural analysis, it looks as if focus determines the relative scope of *again* and some other operator. Neither is an immediate interpretational effect of focus. This is the problem we will be concerned with. I turn to Klein's (2001) paper next.

3. Analysis

3.1. *Klein and Again*

A crucial point for Klein's approach to our problem is the observation (also made by Kamp and Rossdeutscher, 1994) that focus has an interpretational effect on data with *again* even in cases in which the predicate is a simple stative, i.e., where there cannot be a repetitive/restitutive ambiguity. An example is (21).

(21) a. The next fall, they were on the AXALP again.
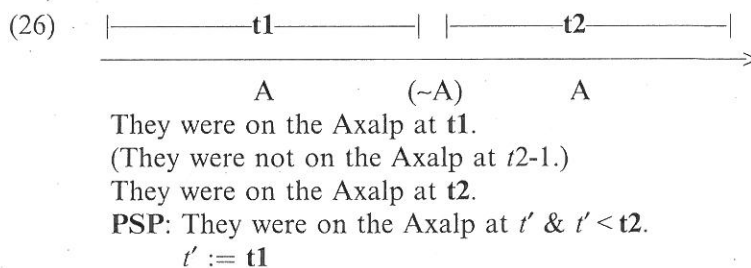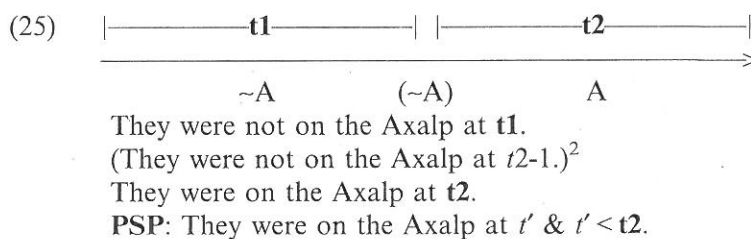 b. The next fall, they were on the Axalp AGAIN.

There is an intuition that in (21a) "they" were restored to a state of being on the Axalp after a previous relevant stay elsewhere. Example (21b) on the other hand simply talks about repeated stays on the Axalp. This intuition can be pinned down as an effect of discourse appropriateness, Klein observes. Examples (21a, b) are appropriate in different contexts, illustrated in (22a, b). The second sentences cannot be switched (22′).

(22) a. In the fall of 1997, they were in Riva. The next fall, they were on the AXALP again.
  b. In the fall of 1997, they were on the Axalp. The next fall, they were on the Axalp AGAIN.

(22′) a. # In the fall of 1997, they were on the Axalp. The next fall, they were on the AXALP again.
  b. # In the fall of 1997, they were in Riva. The next fall, they were on the Axalp AGAIN.

The phenomenon is quite systematic; another instance (also due to Klein) is given below.

(23) a. The next workshop was in ROME again.
   b. The next workshop was in Rome   AGAIN.

(24) a. The third workshop was in Munich. The next workshop was in ROME again.
   b. The third workshop was in Rome. The next workshop was in Rome AGAIN.

An informal illustration of the situations described by (22a, b) is provided by (25) and (26), respectively. I write "PSP" for "presupposition".

(25) |————t1————| |————t2————|
      ————————————————————————————>
          ~A   (~A)   A
      They were not on the Axalp at **t1**.
      (They were not on the Axalp at $t2-1$.)[2]
      They were on the Axalp at **t2**.
      PSP: They were on the Axalp at t' & $t' < $ **t2**.

(26) |————t1————| |————t2————|
      ————————————————————————————>
          A   (~A)   A
      They were on the Axalp at **t1**.
      (They were not on the Axalp at $t2-1$.)
      They were on the Axalp at **t2**.
      PSP: They were on the Axalp at t' & $t' < $ **t2**.
           $t' :=$ **t1**

The following summarizes Klein's view of how the interpretational effect of focus produces this intuitive interpretation (see, e.g., p. 275 last paragraph; a similar idea can be found in Pittner, 2003).

(27) a. A focused predicate is interpreted as contrast with the preceding context $\Longrightarrow$ not repetitive.
   b. A non-focused predicate is interpreted as old information from the preceding context $\Longrightarrow$ repetitive.

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[2] I use $ti-1$ as an informal notation for the time immediately preceding ti. The statement in parentheses is not part of the semantic content derived by the lexical entry for *again* in (6); possibly it ought to be (see Egg, 1994; Stechow, 1996 for analyses that incorporate it). I will ignore this point in the formal discussion.

(28)   Focus comes with its own presupposition, which is sometimes identified with the presupposition of *again*, and sometimes excludes identification.

Thus (21a), with focus on "be on the Axalp", must occur in a context in which a contrasting property is attributed to the subject "they". In the temporal flow of the story, this implies mention of a preceding stay elsewhere. *Again* still triggers the presupposition of an earlier stay on the Axalp, hence we get the interpretation that "they" are restored to being on the Axalp after a preceding stay in some other place. The presupposition triggered by *again* must be accommodated; i.e., when we accept (21a) or (22a) we assume that the larger context somehow does entail a previous stay on the Axalp. Moving on to (21b), the sentence must in contrast to (21a) occur in a context in which "be on the Axalp" is discourse-old, that is, a context mentioning a preceding stay on the Axalp. This preceding stay is identified with the one required by the presupposition of *again*. The discourse (22b) as a whole has no relevant presuppositions.

Klein goes on (p. 283) to suggest that the same reasoning will derive the effect of focus in our original "open the door" – example. I will follow him in this, after I have rephrased his suggestions within standard formal semantic theory.

3.2.   *A Formal Interpretation of Klein*

3.2.1.   *The Presupposition of Again*
A look at Klein's reconstruction of what happens with the Axalp example reveals that he takes the presupposition introduced by *again* to be about a specific time, not existential. This has been argued independently by Soames (1989) (who refers to unpublished work by Kripke), and by Heim (1990). An example I take from Heim (1990) is given below.

(29) a.   We will have pizza on John's birthday, so we shouldn't have pizza again on Mary's birthday.
     b.   We will have pizza on John's birthday, so we shouldn't have pizza on Mary's birthday.

In (29a) but not in (29b) one infers that John's birthday precedes Mary's birthday. This must come from the presence of *again* in (29a). But as long as we take the appropriateness constraint imposed by *again* to be (30a), there is no explanation for the inference:

presumably, we had pizza plenty of times in the past, so this presupposition would be met, independently of John's birthday. Intuitively, however, one takes John's birthday to be *the* relevent prior time at which we had pizza. This follows if the appropriateness condition imposed on the context is as in (30b): of a particular earlier time, the context must entail that we had pizza at that time. The presupposition of *again* is thus specific rather than existential: (31a). In the example, the prior time is assumed to be the time of John's birthday (since this is the only time relevant in the context), hence the inference that John's birthday is earlier than Mary's.

(30) a. $c \implies \lambda w.\exists t'[t' < \mathbf{t1}$ & we have pizza in w at $t']$.
b. $\exists t'[c \implies \lambda w.t' < \mathbf{t1}$ & we have pizza in w at $t']$.

(31) a. that we have pizza at t' & $t' < \mathbf{t1}$.
b. $t' :=$ "on John's birthday".

This argument amounts to the claim that the content of the presupposition triggered by *again* depends on an anaphoric element [as pointed out by Kripke and emphasized in the semantic discussion of Kamp and Rossdeutscher (1994)]. I will follow the argument and represent that element, like other implicit anaphoric elements, as a free variable, to be assigned a value by the contextually relevant variable assignment. A revised lexical entry for *again* is given in (32). The free variable is the first argument of *again* in (32) and shows up as a subscript in the syntactic structure in (33). In (33) I give the interpretation of the example. We try to choose a variable assignment g such that the presupposition triggered by *again* is met. The only value salient for $g(t')$ is John's birthday.

(32) $[\![\text{again}]\!] (t') (p) (t) (w) = 1$ if $p(t)(w)$ & $p(t')(w)$ & $t' < t$
$= 0$ if $\sim p(t)(w)$ & $p(t')(w)$ & $t' < t$
undefined otherwise.

(33) $[\![$ [[[we have pizza] again $_{t'}$] t1] $]\!]^g (w)$
is defined only if we have pizza in w at $g(t')$ and
$g(t') < g(t1)$.
If defined, it is true iff we have pizza in w at $g(t1)$.

3.2.2. *The Theory of Focus*
I will use here what I believe is the standard theory of focus, that of Rooth (1992a) (although I presume that other frameworks could be

used as well). Relevant for our purposes is focus as used in contrast, and I will limit the discussion to that. Examples (34a, b) are a coherent discourse in the sense that (34b) is an appropriate reply to (34a) (perhaps as a contradiction). The same holds for (35a, b). The second sentences of the two discourses cannot be switched – (35b), for example, is not a felicitous reply to (34a). This fact has to be accounted for by a theory of focus interpretation.

(34) a. Robin invited Haldor.
     b. LAURA invited Haldor.

(35) a. Laura invited Pete.
     b. Laura invited HALDOR.

Rooth (1992a) provides such a theory. He associates (34b), (35b) with the structures in (36a) and (36b), respectively. An operator ~ together with a variable C_i (the focus anaphor) has been adjoined to the structure (a category I have labeled α).

(36) a. $[[_\alpha [_F$ LAURA$]$ invited Haldor$] \sim C1]$.
     b. $[[_\alpha$ Laura invited $[_F$ HALDOR$]] \sim C2]$.

Rooth associates two different semantic objects with α, its ordinary semantic value $[\![\alpha]\!]_o$ and its focus semantic value $[\![\alpha]\!]_f$. For the example (36a), both are given in (37a), and for (36b), in (37b). While the ordinary semantic values of (36a, b) are the same (they express the same proposition), their focus semantic values are different: they give rise to different sets of alternative propositions (I ignore the time parameter here for a moment).

(37) a. $[\![\alpha]\!]_o$ = λw.Laura invited Haldor in w
               = that Laura invited Haldor.
      $[\![\alpha]\!]_f$ = $\{\lambda w.x$ invited Haldor in $w \mid x \in$ D$\}$
               = $\{$that Laura invited Haldor, that Robin invited Haldor, …$\}$.
    b. $[\![\alpha]\!]_o$ = λw.Laura invited Haldor in w
               = that Laura invited Haldor.
      $[\![\alpha]\!]_f$ = $\{\lambda w$.Laura invited y in $w \mid y \in$ D$\}$
               = $\{$that Laura invited Haldor, that Laura invited Pete, …$\}$.

It is the task of the ~ operator to make use of the focus alternatives in such a way that the different discourse conditions for felicity of the examples are predicted. The ~ does that by introducing the

presupposition that the context provides a focus alternative to the proposition that is asserted.

(38) $[\![\,[\alpha \sim C_i]\,]\!]_o{}^g$ is only defined if $g(C_i) \in [\![\alpha]\!]_f{}^g \,\&\, g(C_i) \neq [\![\alpha]\!]_o{}^g$.
If defined, $[\![\,[\alpha \sim C_i]\,]\!]_o{}^g = [\![\alpha]\!]_o{}^g$.

Here is how this theory of focus evaluation applies to our examples (36a, b). In (34), the first sentence (34a) expresses a proposition that is a focus alternative to (34b), hence an appropriate antecedent for the focus anaphor. The focus anaphor is assigned this proposition as its value. Analogous reasoning applies to (35). Both discourses are predicted to be acceptable.

(39) $g(C1) := [\![\,(34a)\,]\!]_o$.
$g(C2) := [\![\,(35a)\,]\!]_o$.

Suppose now that we try to give (35b) as a reply to (34a). The $\sim$ operator requires us to look for an antecedent for the focus anaphor in the context. The only salient proposition is the one expressed by (34a). But this is not a focus alternative to (35b). The discourse is predicted to be inappropriate because the presupposition triggered by the $\sim$ operator is not met.

Some terminology: I will refer to (34a) as the focus antecedent of (34b). The focus antecedent of an expression containing a focus and a focus evaluating operator $\sim$ is the linguistic element whose interpretation is the value of the focus anaphor.[3]

3.2.3. Free Temporal Variables and Temporal Progress through Discourse

I have left temporal variables free in the examples that we have discussed so far. This is made necessary by the intuition Klein expressed about (22b) that the time variable in the presupposition triggered by *again* refers to the time interval which the preceding sentence is taken to be about. Thus time variables behave just like pronouns (in the

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[3] Descriptively, it seems that the focus antecedent must be provided in the immediate context and cannot be accomodated. The strangeness of the following example illustrates this. I do not see that this follows from the theory of focus as presented here.

(i)   A (upon entering the room, no preceding context):
The Smiths were on the Axalp YESterday.

B: accomodates that there is a time $t' \neq$ yesterday such that "the Smiths were on the Axalp at t' " is relevant.

example like an anaphoric pronoun). This is of course not a new claim – compare Partee (1973), Stechow (1995b), Kratzer (1998) among others for relevant discussion. I illustrate the point with Partee's example in (40a). Important for us is the free occurrence of the time pronoun in (40). I will ignore the presupposition introduced by the tense, for simplicity, and just use a free time variable as in (40b). Following Klein, I refer to the time interval that a sentence is about as the topic time of that sentence [so the interval I call **t1** in (40b) below would be the topic time of (40a)].

(40) a. I didn't turn the stove off.
   [NOT [I past1 turn the stove off]]
   b. $\lambda w. \sim$ (I turn the stove off in w at **t1**).

(41)   Presupposition triggered by past: $\mathbf{t1} < t_{\text{now}}$.

(42) $[\![\text{past}_i]\!]^g$ is only defined if $g(i) = t$ for an interval t such that $t < t_{\text{now}}$.
   If defined, then $[\![\text{past}_i]\!]^g = g(i)$.

To this understanding of tense we add the observation that as we progress through a discourse, we often or typically also progress through time. For the type of (mini-) discourse we will be looking at, this indeed is the way the discourse is structured. Klein (2001) calls this the principle of chronological order (PCO): unless marked otherwise, order of mention corresponds to order of events (see Klein for more discussion and other types of discourse; like the other linguists criticized by Klein, I will limit my attention to temporally structured discourses). While this is often made explicit (44), it need not be, and we still get the temporal shift: (45). I will represent the information expressed in (44b) and (45) as in (46) ("t1 < t2" is in some sense implied in this discourse, in a way which I will not discuss).

(43)   Principle of chronological order (PCO): order of mention corresponds to order of events.

(44) a. The phone rang. *Ten minutes later*, the mail arrived.
   b. Sam sliced an onion. *Then*, he heated olive oil in a frying pan and sauteed it.
   Stirring in chopped tomatoes, . . .

(45)   Sam sliced an onion. He heated olive oil in a frying pan and sauteed it.
   Stirring in chopped tomatoes, . . .

(46) λw.Sam sliced an onion at **t1** in w.
       λw.Sam heated olive oil at **t2** in w (& **t1** < **t2**).

       . . .

3.2.4. *The Analysis of the Axalp-Example*

We are now ready to formalize the discussion from Section 3.1. The second sentence in (47a) is represented in (48a). I take focus to be on the predicate "(be) on the Axalp". The free time variable occurs before the verb. The ~ operator is attached to the structure as a whole. Things will work out well if we assume that we have the focus semantic value given in (48b). That is a set of propositions that vary in the place of the predicate as well as the time variable; the latter assumption may seem somewhat unusual and will be discussed below – the reader may first convince herself that making it solves our problem.[4]

(47) a. In the fall of 1997, they were in Riva. The next fall, they were on the AXALP again.
     b. In the fall of 1997, they were on the Axalp. The next fall, they were on the Axalp AGAIN.

(48) a. $[[_\alpha$ they $t2$ be [on the Axalp]$_F$ again$_{t'}]$ ~$C1]$.
     b. $[\![_\alpha]\!]_f^g$ = {that they were P at t | $P \in D_{\langle e,\langle \tau,\langle s,t\rangle\rangle\rangle}$, $t \in T$}
         = {that they were on the Axalp at **t2**, that they were in Riva at **t1**,...}.

The constraint imposed by the ~ is repeated in (49). In our example (47a), the first sentence expresses a proposition that is an appropriate value for the focus anaphor (50a). As we said earlier, the presupposition triggered by *again* remains a presupposition of the discourse as a whole.

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[4] The contribution of again is ignored in the focus alternatives. This can be motivated independently by examples like (i) below.

(i)   A: Who (all) did you call?
        B: I only called JOHN again.
(ii)   relevant interpretation of (iB):
        Presupposition: I had called John before.
        Assertion: I didn't call anybody except for John.

The relevant interpretation (ii) is one in which the focus alternatives that *only* considers ignore the contribution of *again*.

(49) $g(C_i) \in [\![\alpha]\!]_f^g$ & $g(C_i) \neq [\![\alpha]\!]_o^g$.

(50) a. $g(C1) :=$ that they were in Riva at **t1**.
     b. **PSP**: that they were on the Axalp at $g(t')$ & $g(t') < $ **t2**.

(51)–(52) go through the same steps for example (47b). We assume that the focus alternatives vary in the place of the adverb and the time variable. Alternatives to *again* include a semantically empty adverb (the identity function of the relevant semantic type; an assumption to be discussed in Section 5).

(51) a. $[[_\alpha$ they $t2$ be on the Axalp [again]$_F$]~C2].
     b. $[\![\alpha]\!]_f = $ {that they were *Adv* on the Axalp at t | *Adv*
               $\in D_{\langle\langle\tau,\langle s,t\rangle\rangle,\langle\tau,\langle s,t\rangle\rangle\rangle}$, $t \in$ T}
           = {that they were on the Axalp again at **t2**,
               that they were on the Axalp Ø at **t1**, ...}.

Once more, the first sentence in (47b) is an appropriate value for the focus anaphor. This time, the presupposition triggered by *again* is met within the discourse, and the discourse as a whole has no relevant presuppositions.

(52) a. $g(C2) :=$ that they were on the Axalp at **t1**.
     b. **PSP**: that they were on the Axalp at $g(t')$ & $g(t') < $ **t2**.
        $g(t') :=$ **t1**.

Trying to switch the second sentences in (47) as indicated in (47'), we see that the first sentence of (47'a) is not an appropriate antecedent for the focus anaphor in the second sentence. The same holds for the reverse pairing (47'b). Thus we make the desired predictions about the discourse behaviour of (21a, b).[5]

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[5] We make this prediction as long as it is a given that the presupposition triggered by the evaluation of focus through the ~ cannot be accomodated. Suppose the sequence in (i) = (47'b) could trigger accomodation of the focus presupposition as indicated in (ii). It should then be about as well-formed as (47a) which requires accomodation of *again's* presupposition.

(i)   # In the fall of 1997, they were in Riva. The next fall, the were on the Axalp AGAIN.
(ii)   accomodate: they were on the Axalp at t' (t' before fall of 1998).

It is interesting that the presupposition triggered by focus does not behave like the presupposition triggered by *again* in this respect (compare also fn 3).

(47′) a. # In the fall of 1997, they were on the Axalp. The next fall, they were on the AXALP again.

b. # In the fall of 1997, they were in Riva. The next fall, they were on the Axalp AGAIN.

(21) a. The next fall, they were on the AXALP again.

b. The next fall, they were on the Axalp AGAIN.

It seems reasonable to assume that when one encounters (21a, b) out of the blue, one tries to reconstruct what would be appropriate contexts for the two. Thus for (21a) to be appropriate means that the sentence has to be uttered in the context of a mention of "they were at P (P ≠ Axalp)". The PCO suggests that the stay at P was before the stay on the Axalp. Accomodating the presupposition of *again* leads one to assume that there was a stay on the Axalp before topic time $t1$; thus we have a stay on the Axalp before $t1$, a stay at P ≠ Axalp at topic time $t1$ (via focus), and a stay on the Axalp at topic time $t2$ as asserted by the sentence. This accounts for the "restitutive" flavour of (21a). The purely repetitive flavour of (21b) arises as follows: for (21b) to be appropriate, "they be on the Axalp" must be discourse-old. The PCO suggests that the "old" stay on the Axalp was at topic time $t1$, and the stay on the Axalp mentioned in (21b) at the later topic time $t2$. The adverb *again* presupposes a stay on the Axalp preceding topic time $t2$. It is natural to identify this with the stay on the Axalp at topic time $t1$. The resulting picture is a stay on the Axalp at topic time $t1$ and another stay on the Axalp at topic time $t2$. The Axalp example thus shows us that focus all by itself has an effect on "repetitiveness", even in cases in which a true repetitive/restitutive ambiguity is not involved.

Aside from the semantic theories already introduced, I have used two further assumptions in deriving the desired predictions. First, time variables are taken to vary within the focus alternatives. This is necessary for the second sentence in (47a) to pick up the first sentence as an appropriate focus antecedent, for example – if the time variable remained the same in the focus alternatives, it would not be appropriate. Second, the semantic contribution of *again* featured in the focus alternatives in (51b) in a perhaps unexpected fashion. Once more, this was needed to make things work. I will return to focus on *again* in Section 5, after we have seen that the approach introduced here does in fact offer a solution to our original problem. I comment on varying time variables briefly below.

3.2.5. *Varying Time Variables*

We saw that the time interval must be able to vary in the focus alternatives. That is, roughly speaking, "they were on the Axalp at **t1**" must count as an alternative to "they were on the Axalp at **t2**". This is true for both versions of the Axalp example. How do we predict that?

(53) a. S1: (In the fall of 1997) they were on the Axalp.
     S2: (The next fall) they were on the Axalp AGAIN.
   b. $[[S1]]_o \in [[S2]]_f$.
     $[[S2]]_f = \{$that they were Adv on the Axalp at t $|Adv$
     $\in D_{\langle\langle\tau,\langle s,t\rangle\rangle,\langle\tau,\langle s,t\rangle\rangle\rangle}, t \in T\}$.

(54) a. S1: (In the fall of 1997) they were in Riva.
     S2: (The next fall) they were on the AXALP again.
   b. $[[S1]]_o \in [[S2]]_f$.
     $[[S2]]_f = \{$that they were at P at t $|P \in D_{\langle e\langle\tau,\langle s,t\rangle\rangle\rangle}, t \in T\}$.

The first option that comes to mind is that the expression denoting the time interval is focused in the standard way, phonological prominence. In the examples that I have analysed, this seems plausible. Both times, there is a time adverbial "the next fall", which could reasonably be taken to refer to the topic time interval and to be focused. But I do not think that things are generally so obvious. Consider (55).

(55)   Sam stirred the soup. His helpers put in some parsley. He stirred the soup AGAIN.

There is nowhere to realize phonological focus on the time variable in the last clause of the discourse, but we do want the proposition expressed by the first sentence (about an earlier time) to be the focus antecedent. I will assume here that in such cases the tense pronoun is indeed literally focused. I think that this is a natural consequence of the "tenses as pronouns" theory once it is connected to focus issues, independent of the issues surrounding *again*. Consider (56).

(56) a. Jill saw "Finding Nemo" and Tom "The Return of the King".
   b. ... but not at the same time.
   c. [S1 Jill saw "Finding Nemo"] and [S2 Tom __ "The Return of the King"].

I assume that in cases in which a sentence S2 contains an ellipsis that finds its antecedent in a sentence S1, S2 must stand in a contrast relation to S1 – i.e., $[\![S1]\!]_o \in [\![S2]\!]_f$ (compare Rooth 1992b; Tomioka 1997). It is quite possible that the two movie events happened at different times. An analysis of time variables as refering to time intervals leads us to the following focus semantic value for S2:

(57) $[\![S2]\!]_f = \{$that x saw y at $t \mid x, y \in D \ \& \ t \in T\}$.

Thus it seems to me that as long as one endorses the "tenses are pronouns" theory, one must assume that time intervals can vary in alternative sets – quite independently of the issue of focused and unfocused *again*. The obvious technical solution is to assign a focus feature to the silent time variable; this is demonstrated in (58): (58b) will derive the desired (57) (see Rullmann (2003) for another analysis that uses focus features on silent elements and arguments to the effect that this is plausible). Compare also Beck (to appear a) for further discussion of this issue and possible alternative solutions.

(58) a. [S1 Jill saw "Finding Nemo"] and [S2 Tom __ "The Return of the King"].
   b. [S2 Tom$_F$ ~~[t]~~$_F$ ~~see~~ ["The Return of the King"]$_F$].

A final comment: I take it that focus alternatives to a time interval are other topic times; thus the set of alternatives is restricted.

3.3. *Applying the Analysis to the Problem*

Remember that we are concerned with the facts in (59), which we will examine in the context in (60).

(59) a. Otto OPENED the door again.   (repetitive/restitutive)
   b. Otto opened the door AGAIN.   (repetitive only)
(60) a. Otto closed the door. Ten minutes later, he OPENED it again.
   b. Otto opened the door. Ten minutes later, he opened it AGAIN.

The analysis proceeds in a way entirely parallel to the Axalp-example. Example (59a) is associated with the structure in (61a). Focus alter-

natives are propositions that vary in the slot for the verb and the time variable – alternative relations between Otto and the door.[6]

> (61) a. $[[_\alpha$ Otto $[_F$ $t2]$ $[_F$ OPEN] the door again $_t]$ ~C1].
> b. $[\![\alpha]\!]_f$ = {that Otto Red the door at t |
> $R \in D_{\langle e, \langle e, \langle \tau, \langle s, t \rangle \rangle \rangle \rangle}$, $t \in T$}
> = {that Otto opened the door at **t2**, that Otto closed the door at **t1**, …}.

Given the constraint on the focus anaphor repeated in (62), we look for an antecedent proposition "that Otto Red the door at time t_i". In the context of (60a), the first sentence expresses just such a proposition. Now, regarding the interpretation of *again*, we have both the possibility of a repetitive interpretation and that of a restitutive interpretation. Their presuppositions are given in (63b(i)) and (63b(ii)), respectively, under the structural analysis of the repetitive/restitutive ambiguity. The first presupposition is not met in our context. The second presupposition is actually met: in order to close a door, it has to be open.

> (62) $g(C_i) \in [\![\alpha]\!]_f^g$ & $g(C_i) \neq [\![\alpha]\!]_o^g$

> (63) a. $g(C1)$:=that Otto closed the door at **t1**.
> b. **PSP**: (i) that Otto opened the door at $g(t')$ & $g(t') <$ **t2**.
> (ii) that the door was open at $g(t')$ & $g(t') <$ **t2**.
> $g(t')$:= begin(**t1**)   (**t1** the time of the closing).

Under the lexical analysis, the first presupposition remains exactly the same. The presupposition of the restitutive reading is given in (64) for this example. It is obviously met in the discourse in (60).

> (64)   **PSP**: that the door closed at $g(t')$ & $g(t') <$ **t2**.
> $g(t')$:=**t1**.

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[6] The need to derive these focus alternatives suggests a slight revision of Stechow's decomposition analysis. I propose that we derive the structure (ib) from the deep structure (ia). (ib) contains a constituent (the larger VP) that denotes the desired relation between Otto and the door. We have to assume that constituent shows up as "opened" overtly and can be focused. Stechow's original proposal (13c) does not, under standard assumptions, contain such a constituent.

(i)   a. underlying structure: [Otto $[_{VP}$ $Ø_V$ $[_{SC}$ [the door] open]]].
        b. surface structure: [Otto [[the door] $[_{VP}$ 1 $[_{VP}$ $Ø_V$ $[_{SC}$ $t1$ open]]]]].

No matter which theory of *again* we adopt, then, the presupposition triggered under the restitutive reading is met, while the presupposition of the repetitive reading is not, and would be inherited as a presupposition of the whole discourse. We can suppose that one disprefers accomodation if there is an alternative interpretation that does not require it. Then, we expect that (60a) out of the blue favours the restitutive interpretation. In an appropriate context, in which the "repetitive" presupposition is met, the repetitive reading should be equally possible. I think, like Stechow (1996, fn 2) and Pittner (2003) that this captures the facts. Stechow, Pittner and I disagree with Jäger and Blutner (2000, 2003) on this matter.

We now turn to the crucial example (59b). Our goal is to predict the loss of the restitutive reading in this example. Its structure is given in (65a). We assume the focus alternatives in (65b), in accordance with what has been said so far.

(65) a. $[[_\alpha$ Otto $[_F t2]$ open the door $[_F \text{AGAIN}_{t'}]] \sim C2]$.

    b. $[\![\alpha]\!]_f$ = {that Otto opened the door *Adv* at $t \mid Adv$

         $\in D_{\langle\langle\tau,\langle s,t\rangle\rangle,\langle\tau,\langle s,t\rangle\rangle\rangle}$, $t \in T$}

      = {that Otto opened the door again at **t2**,

        that Otto opened the door $\varnothing$ at **t1**,...}.

Given the constraint introduced by the $\sim$, it is required that the context furnish a salient proposition "that Otto opened the door at time t_i". The first sentence in the discourse in (60b) expresses such a proposition. Regarding the role of *again*, the two presuppositions triggered under the two possible interpretations are given in (66b) (once more under the structural analysis). In (67) I provide the "restitutive" presupposition under the lexical theory (the "repetitive" presupposition is of course the same).

(66) a. $g(C2) :=$ that Otto opened the door at **t1**.

    b. **PSP**: (i) that Otto opened the door at $g(t')$ & $g(t') < $ **t2**.

            $g(t') :=$ **t1**.

        (ii) that the door was open at $g(t')$ & $g(t') < $ **t2**.

            $g(t') :=$ end(**t1**)   (**t1** the opening).

(67)   **PSP**: that the door closed at $g(t')$ & $g(t') < $ **t2**.

The presuppositions expected under the structural theory are both met within the discourse. It can be argued that the "restitutive"

presupposition expected under the lexical theory can be inferred from the discourse, too.[7] If that is so, the whole discourse is not predicted to have relevant presuppositions.

Here is the crucial point: 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.

This analysis, therefore, successfully predicts the example to receive a repetitive interpetation only. The explanation is pragmatic, in that the prediction follows from focus interpretation and discourse appropriateness. Semantics proper derives two readings of our example, but it will only be able to be used felicitously in a repetitive scenario. The idea for this explanation is Klein's. I find the explanation of the interpretive effect of focus on *again* attractive and elegant. We have seen that there are no fundamental problems in translating it into standard semantic theory.

3.4. *The Pragmatic Nature of the Explanation*

According to this analysis, neither sentence in (59) is formally disambiguated. The interpretational strategies described in Section 3.3 are a default case for what happens to data like (59) in a normal context. It should be possible to override the tendencies described. This section investigates which contextual parameters have to be changed in order for the default strategies not to apply. Three cases would be of interest: (i) a context in which the predicate is focused but we get a repetitive reading, (ii) a context in which the predicate is backgrounded, *again* is not focused and we get a restitutive reading and (iii) a context in which the predicate is backgrounded, *again* is focused and we get a restitutive reading. The latter two cases are treated separately, notice, because the explanation for the non-ambiguity of (59b) hinged on the fact that the

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[7] Alternatively, the discourse would presuppose that the door closed between the two openings, and one would probably accomodate the presupposition. While it is clear that the discourse implies, in some sense, that the door closed in between openings, I am not sure whether this should be a presupposition or some other form of entailment/implicature. At any rate, it is independent of *again*, as (i) shows.

(i)   Bill opened the door. Ten minutes later, JOHN opened it.

predicate was backgrounded (thus invariant in the focus alternatives) – not on the fact that focus fell on *again*. It will be interesting to separate these two aspects of (59b).

To illustrate case (i), we look at one version of the example (68) given in Stechow (1996, fn 2):

(68) a. Jetzt FAEHRT der Bus.
    now moves the bus.
    Now the bus is moving.

b. Jetzt bleibt er STEHEN.
    now stays it stand
    Now it is standing still.

c. Jetzt FAEHRT er wieder.
    now moves it again-
    Now it is moving again.

As anticipated above, it is possible to contrast "move" with "stand still" in (68c) and yet have what is plausibly a repetitive reading. Similarly (69b) is a well-formed continuation of (69a) with the indicated focus pattern and plausibly repetitive. Its repetitive interpretation can be forced by the word order in (69b′) (compare Beck and Johnson (2004): *again* preceding the finite verb in English is unambiguously repetitive), keeping the accent pattern.

(69) a. John opened the door. Sally closed it.
    b. So John OPENED the door again.
    b′. So John again OPENED the door.

The distinction to the original "open the door" example is that there is a plausible independent reason to focus the predicate (contrast) and at the same time, the context does provide an antecedent for *again*'s repetitive presupposition. Then, this focus pattern is compatible with repetitive *again*.

We turn to case (ii) next: backgrounded predicate with non-focused *again*. Examples (70) and (71) show that a restitutive reading is possible for such structures.

(70)   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 around to it.
    So EWAN emptied it again.

(71)   SANdy opened the DOOR again and KIM the WINdow.

(71′)   Sandy brought it about that the door was once more open, and Kim brought it about that the window was once more open.

Here, we can have a restitutive reading despite the fact that the predicate is backgrounded because a mere "carrying over" of the predicate (due to focus interpretation) is not enough to ensure repetition. In (70) for instance focus finds an antecedent "*x* empty it at *t*" but this is not entailed by the discourse. In the data typically discussed in this connection, like (59) in the contexts in which it is normally considered, the backgrounded verb conspires with other discourse properties including temporal flow in such a way as to enforce repetition. But this is not necessarily the case. Another way to avoid repetitiveness is changing the participants as in (71).

(59) a. Otto OPENED the door again.
     b. Otto opened the door AGAIN.

I will postpone discussion of case (iii) for later, when we have examined focus on *again* in Section 5. Before we move on, let me relate the proposal made in this section to the analysis proposed in Jäger and Blutner (2000, 2003) – J&B from here on. J&B take it that (59a) is unambiguously restitutive and (59b) is unambiguously repetitive. They suggest an analysis in terms of optimality theory (OT) that derives this. A crucial ingredient is the assumption that deaccented material must be discourse-old, that is, GIVEN in the sense of Schwarzschild (1999) in their theory. Moreover, it is assumed that what is presupposed is indeed GIVEN. Thus the verb meaning is GIVEN on the repetitive reading of *again*, but not on the restitutive reading. A further constraint states that when something is GIVEN, it must be deaccented. The OT component developed by J&B thus derives that (59a) is unambiguously restitutive: the repetitive reading is excluded by the constraint that GIVEN material must be deaccented. It also derives that (59b) is unambiguously repetitive: everything except *again* must be GIVEN, and this will only be the case if *again* is used repetitively.

There are several differences between J&B and my analysis. J&B made a different theoretical decision by using Schwarzschild's GIVENness theory instead of Rooth (1992a). Their requirement that deaccented material be GIVEN can be seen as a Schwarzschildian

version of Rooth's requirement that non-focused material needs a discourse antecedent. Modulo the theoretical difference, this is then an element that our two analyses have in common: that in a simple case like (59) focus itself carries a requirement that may lead to a "carrying over" or repetition of the predicate. A genuine difference between our approaches is that J&B predict the interpretation of a sentence with *again* in isolation; this is a matter of the grammar. The analysis presented above, on the other hand, derives possible interpretations of a sentence with *again* from the context in which the sentence occurs, or can appropriately occur. This is a matter of pragmatics, the grammar does not disambiguate. Hence there may be variation in which interpretations an accent pattern permits depending on the context it occurs in. I think the data discussed above speak for the pragmatic approach.

4. ANAPHORIC PRESUPPOSITIONS AND COHERENT DISCOURSE

This section discusses some implications of the analysis of *again*'s presupposition given above. The analysis brings together several previously noticed facts about *again* in discourse, which I present and elaborate on (see also Beck (to appear b)). Our starting point is the semantics in (72), according to which the content of the presupposition triggered by *again* depends on an anaphoric element (the variable called t' here).

$$(72) \quad \llbracket \text{again} \rrbracket \, (t') \, (p) \, (t) \, (w) \; = \; 1 \text{ if } p(t)(w) \ \& \ p(t')(w) \ \& \ t' < t$$
$$= \; 0 \text{ if } \sim p(t)(w) \ \& \ p(t')(w) \ \& \ t' < t$$
$$\text{undefined otherwise.}$$

In this, *again* is not unique. The literature (Soames, 1989; Heim, 1990; Beaver, 2001) notes that a similar point can be made for *also* and *stop*, for example. I will concentrate on *again*.

4.1. *Antecedents for Uses of Again*

Again on both the repetitive and restitutive reading should be recognizably anaphoric, given this analysis. That is, we should always be able to identify *the* relevant prior time of an occurrence of *again* in discourse. It has been observed (Kamp and Rossdeutscher, 1994; Fabricius-Hansen 1994; Klein, 2001) that this is indeed a property of *again*. Below are some examples that I collected that illustrate this.

I underline the predicate that *again* combines with as well as the preceding predicate that causes *again*'s presupposition to be satisfied. The relevant prior time that the presupposition triggered by *again* refers to would be the time interval associated with the first predicate. I will refer to the underlined first predicate (and sometimes also the sentence containing it) as the presupposition antecedent of the sentence with *again*; the presupposition antecedent is the linguistic expression that verifies *again*'s presupposition.

(73) Project Gutenberg – repetitive uses:

    a. She rather suspected it to be so [...] from <u>his listening to her</u> so attentively while she sang to them; and when the visit was returned by the Middletons' dining at the cottage, the fact was ascertained by <u>his listening to her</u> **again**. ("Sense and Sensibility", Jane Austen)

    b. [...] the old lady shook the bottle with the air of a general who had <u>routed the foe</u> before and meant to <u>do it</u> **again**. ("Jack & Jill", Luisa May Alcott)

(74) Project Gutenberg – restitutive uses:

    a. As she said this, she <u>sunk into a reverie</u> for a few moments;–but <u>rousing herself</u> **again**, [...]   ("Sense and Sensibility", by Jane Austen).

    b. And <u>away she went</u>; but <u>returning</u> **again** in a moment, [...] ("Sense and Sensibility", by Jane Austen).

I should point out that while Fabricius-Hansen (2001) also calls the presupposition of *again* anaphoric, there is a difference in what we mean by this. According to her, the presupposition of *again* is anaphoric in the way that all presuppositions are anaphoric – in the sense of van der Sandt (1992). This is not what is meant here. I do not regard the presupposition triggered by *again* itself as an anaphor. For me, it is an admittance condition. But its content depends on an anaphoric element – i.e., what presupposition precisely is triggered depends on the context. This is not a property of all presuppositions. The content of the presupposition triggered by the definite article, for example, does not (necessarily) depend on an anaphor.

4.2. *Anaphoric Presuppositions in Discourse*

It is obvious from the data we have seen that anaphoric presuppositions play an important role for discourse coherence. They guide us

in organizing the information provided by individual sentences into a coherent whole. This becomes most obvious when they lead to inferences that would not otherwise have been justified. Let us reexamine the pizza example from this perspective.

(29a) We will have pizza on John's birthday, so we shouldn't have pizza again on Mary's birthday.

The observation is that (29a) supports the inference (75a). Why does it do that? The context to which the second sentence of (29a) is added entails of a time t' that we had pizza at t' ((75b)). The use of *again* imposes on the context the requirement (75c). The context does not entail that $t' < t1$. It seems that we assume that $t' < t1$ is in fact the case – i.e. we accomodate the missing part of the presupposition of *again*. This 'partial' accomodation surfaces as an inference. Crucially, the anchor for the inference is the time t' about which we already have some information in the context. We then infer additional information about t'.

(75) a. John's birthday precedes Mary's
b. $c \implies$ that we have pizza at t'.
c. $c \implies$ that we have pizza at t' & $t' < t1$.
d. accomodate: $t' < t1$.

The pizza example is not unique in supporting such inferences, and is therefore, not unique as an illustration of the anaphoric nature of the presupposition that *again* gives rise to. The following example also supports an inference that is a partial presupposition accomodation, and once more the key to what is accomodated is the anaphoric first argument of *again*. In neither of the examples would this particular inference arise if *again* were not anaphoric, i.e., did not make reference to a particular time. Kamp and Rossdeutscher (1994) call such effects "presupposition justification" (see also Beck (to appear b) for discussion).

(76) In January 2000, we were skiing in Grafton. In January 2001, we were skiing in Vermont AGAIN.[8]

(77) a. (76) $\implies$ Grafton is in Vermont.
b. $c \implies$ that $t' < t1$ & we were skiing at t'.

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[8] The nature of the inference that (76) gives rise to depends on focus. If focal stress falls on *Vermont* instead of *again*, one would infer that Grafton is not in Vermont. This should be derived from the presupposition of focus. Skiing in Grafton should contrast with skiing in Vermont, and it seems it can only do so if Grafton is not a part of Vermont. I leave the details for another occasion.

c. c $\Longrightarrow$ that $t' < \mathbf{t1}$ & we were skiing at t' & we were in Vermont at t'.

d. accomodate: we were in Vermont at t'
hence: Grafton is in Vermont.

When there are no additional inferences, the role of the anaphoric presupposition seems to be to confirm an interpretation arrived at on independent grounds. The example below illustrates that.[9]

(73a) She rather suspected it to be so [...] from his listening to her so attentively while she sang to them; and when the visit was returned by the Middletons' dining at the cottage, the fact was ascertained by his listening to her again. ("Sense and Sensibility", Jane Austen).

(78) a. that he listened to her at $\mathbf{t1}$.
that he listened to her at $\mathbf{t2}$ & $\mathbf{t1} < \mathbf{t2}$.

b. presupposition triggered by *again*:   that he listened to her at t' & $t' < \mathbf{t2}$ $t' := \mathbf{t1}$.

The relevant aspects of the interpretation of (73a) are given in (78a). The temporal order of the events derives from the PCO as well as the use of the expression "return the visit". The use of *again* confirms that this is the temporal organization of the events described (cf. (78b)).

4.3. *Some Consequences*

The requirement that there be a salient previous time interval for the presupposition of *again* to refer to restricts the use of *again*. This concerns in particular availability of restitutive *again*. Daniel Büring (personal communication) points out to me that data like (79b) below cannot be used in the context described, despite the fact that the presupposition of the restitutive reading is in fact entailed by the context.

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[9] *Again* is actually obligatory in this example; i.e., without *again* the sequence would sound odd. This is an aspect of the discourse behaviour of *again* that I will not investigate in this paper. Compare Sæbø (2004) for a recent discussion of obligatory *also* and *again*.

(79) a. They had closed the store a while ago. But they opened the store yesterday,

    b. # and the day before yesterday, they had opened the store again.

I propose that the problem with the use of *again* in this discourse is salience. The second sentence provides a time interval "yesterday" at which they opened the store, making this a salient antecedent for the time interval in the presupposition of *again*. But this is contradicted by the assertion (79b) makes about a time interval preceding "yesterday". The sentence is odd on the restitutive reading for the same reason that the last sentence (80) below cannot be taken to talk about Clinton: Bush is the maximally salient antecedent for the pronoun, and it is hardly possible to take it to refer to Clinton instead.

(80)   When I came to the US in 1997, Clinton was still the president. But then the Republicans won and Bush became president in 2000. He is a Democrat.

It is obvious that the repetitive reading of *again* is not licensed in (79b). Hence the discourse is odd altogether. Note also that the following version is fine; one accomodates that Wednesday is earlier than the day before yesterday. This also shows that the topic time of the second sentence is *the* salient antecedent for the presupposition of *again*.

(79′) a. They had closed the store a while ago. But they had opened the store on Wednesday,

    b. and the day before yesterday, they had opened the store again.

An interesting recent discussion of presupposition justification with *again* can be found in van der Sandt and Huitink (2003). They observe that the two conjuncts in the presupposition triggered by *again*, "$p(t')(w)$" and "$t' < t$" in the formulation below, can be licensed by different parts of the surrounding context.

(72) $[\![$again$]\!]$ (t') (p) (t) (w) $= 1$ if $p(t)(w)$ & $p(t')(w)$ & $t' < t$
                                  $= 0$ if $\sim p(t)(w)$ & $p(t')(w)$ & $t' < t$
                                    undefined otherwise.

The focus of their discussion is a theoretical one. They adopt van der Sandt's (1992) theory of presupposition, according to which a

presupposition as a whole – "$p(t')(w)$ & $t' < t$" in (72) – requires an antecedent in the context. When the two parts of the presupposition are licensed in different places, i.e., have different antecedents on this view, this looks like a problem (as described in Huitink, 2003). Van der Sandt and Huitink propose a solution to this problem within the framework of van der Sandt. Notice that this behaviour of *again* is not a problem under the theory of presupposition as admittance condition advocated here. The context as a whole has to entail the presupposition; which "parts" of the context are responsible is irrelevant. Putting it differently, on my approach (81a, b) amount to the same:

(81) a. φ presupposes p & q.
b. φ presupposes p and φ presupposes q.

Even so, it should be mentioned that van der Sandt and Huitink exploit the conjunctive nature of *again*'s presupposition to account for further interesting data like (82) (attributed to Kripke) and (83) (due to Hans Kamp (personal communication)). On my view, these examples involve further instances of partial presupposition accomodation as discussed in Section 4.2 (more complicated because of the embedded contexts in which the presupposition trigger occurs). The reader is referred to van der Sandt and Huitink for more details.

(82) a. If floppy will be on the run at Christmas, she will be on the run again at Mary's party.
b. Christmas is before Mary's party.

(83) a. # Floppy will be on the run at Christmas, but she will never be on the run.
b. Floppy will be on the run at Christmas, but she will never be on the run again.

5. FOCUSED *AGAIN*

We now return to the question of what happens when focus falls on the adverb *again*. Section 5.1 deals with focus alternatives to *again*, and Section 5.2 reexamines focused *again* and the repetitive/restitutive issue.

5.1. *Alternatives to Again*

It is an empirical question what focus alternatives to *again* are. I use contrast to examine this question. I suggest that typical focus alternatives to *again* are a semantically empty adverb (i.e., the identity function of the same type as *again*) and the adverb *still*. There may be a couple further plausible alternatives like (*not*) *yet* and (*not*) *anymore* (thanks to Graham Katz for pointing this out). It is also likely that the set of focus alternatives varies with context. I will concentrate on the semantically empty adverb and *still*.

Let ALT_x be the set of contextually relevant focus alternatives to expression x. This set will contain the focused element itself as well as its alternatives. The assumption that we have a typical set of alternatives $ALT_{again} = \{[\![again]\!], [\![still]\!], \emptyset\}$ explains discourse coherence in the exchanges below.

(84) A: Ellen is the president.
    B: a. (Yes,) Ellen is STILL the president.
       b. (Yes,) Ellen is the president AGAIN.

(85) A: Ellen is still the president.
    B: (No,) Ellen is the president AGAIN.

Regarding (84A–84Bb), for example, a natural analysis would be to regard (84A) as the focus antecedent for (84Bb), as indicated in (86). This implies (86c), which in turn implies that an alternative to *again* is the empty adverb.

(86) a. $g(C) \in [\![\alpha]\!]_f^g$ & $g(C) \neq [\![\alpha]\!]_o^g$
    b. [[Ellen is the president AGAIN] ~C]
       $g(C) := [\![Ellen\ is\ the\ president]\!]_o$.
    c. $[\![Ellen\ is\ the\ president]\!]_o \in [\![Ellen\ is\ the\ president\ AGAIN]\!]_f$.

In (87a, b) are examples of sentence internal contrast that show the same. I assume that in cases in which a sentence S2 contains an ellipsis that finds its antecedent in a sentence S1, S2 must stand in a contrast relation to S1 – i.e. $[\![S1]\!]_o \in [\![S2]\!]_f$ (compare Rooth, 1992b; Tomioka, 1997); the account can be extended to deaccenting (87b).

(87) a. Peter is still in Rome and Paul is AGAIN.
    b. Peter is in Rome and Paul is in Rome AGAIN.

Sentence (88a) is an example in which "be in Rome" and "be in Rome again" are scalar alternatives. Sentence (88b) may be an example of association with scalar *only*. Both have a metalinguistic flavour because we try to focus a presupposition, but they are not unacceptable.

(88) a. Peter is in Rome. He is even in Rome AGAIN.
     b. Peter is only in Rome AGAIN – he is not STILL in Rome.
     c. scale: "be in Rome" < "be in Rome again" < "still be in Rome"

It is instructive to contrast the data above with examples that do not work. *Again* being an adverb that combines with a proposition to yield a proposition, the question arises whether other adverbs of the same type could not be focus alternatives, too. This is not generally plausible, as (89a)–(89c) illustrate. This shows in turn that the tests I ran above are meaningful tests and do indeed tell us something about focus alternatives to *again*.

(89) a. ?? Peter is probably in Rome and Paul is AGAIN.
     b. ?? Peter is in Rome often and Paul is AGAIN.
     c. ?? Peter is only PROBABLY in Rome – he is not STILL in Rome/in Rome AGAIN.

A more minimal contrast exists between *again* and *for the second time* concerning their respective focus alternatives (thanks to Irene Heim (personal communication) for pointing this out). The contrast between (90a) and (90b) shows that it matters for the purpose of focus alternatives whether a meaning component is asserted or presupposed: what is presupposed by *again* is asserted by *for the second time*. *For the first time* is a focus alternative to *for the second time*, but not to *again*.

(90) a. ?? Peter is in Rome for the first time and Paul (is) AGAIN.
     b. Peter is in Rome for the first time and Paul for the second time.

Given these observations, I suggest the hypothesis below. Compare Beck (2005b) for more discussion of focus alternatives to presuppositional elements. For the purposes of Section 3, I conclude that the assumption about focused *again* that I used in order to solve the focus problem is needed independently, motivated by the data in this subsection.

(91)   Hypothesis:
Focus alternatives to purely presuppositional elements are other purely presuppositional elements plus the semantically empty alternative of the same semantic type.

5.2. *Focused Again* in *Discourse*

Given what has been said above, one might expect there to be no difference between the discourse behaviour of focused *again* vs. unfocused *again*. The presupposition triggered by *again* remains the same whether *again* is focused or not. And since a focus alternative to *again* is the empty adverb, no strict requirements are imposed on a focus antecedent through focusing *again*.

However, there are empirical differences between focused and unfocused *again*. The following examples clearly illustrate differences in terms of discourse appropriateness. Example (92) is inspired by data in Klein (2001), and (94) I owe once more to Daniel Büring (personal communication).

(92) a. Smith was a Republican, Jones was a Republican, Longbottom was a Republican AGAIN.
     b. Smith was a Republican, Jones was not a Republican, Longbottom was a Republican again/*AGAIN.

(93)   Smith was a Republican, it is possible that Jones was a Republican,
Longbottom WAS a Republican again/*Longbottom was a Republican AGAIN.

(94) a. 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 around to it.
     b. * So EWAN emptied it AGAIN.
     b'. ok So EWAN emptied it again (compare (70)).

Let's begin with (92); imagine somebody reading through a list of former US presidents. In (92a), focused *again* is fine, while in (92b) *again* cannot be focused. The difference is that the preceding sentence/utterance in (92a) is an appropriate presupposition antecedent;

in (92b), it is not the immediately preceding sentence/utterance that justifies *again*'s presupposition.

I will describe the effect of focus on *again* as follows (see also Klein, 2001): when *again* is not focused, the time interval t' that the presupposition of *again* makes reference to must be some salient time interval from the context. But when *again* is focused, it seems to have to be identified as the immediately preceding topic time – typically, the topic time of the immediately preceding sentence.[10]

Whether *again* is appropriate then depends on whether the immediately preceding sentence verifies its presupposition. In other words, in a sentence with focused *again*, the focus antecedent for the sentence is also the presupposition antecedent. Why should that be the case?

I offer the following speculation: when *again* is stressed, what is focused is actually the local tree that includes *again* and the time variable t' that is *again*'s first argument. Let's say that this implies that the variable t' is focused.

(95) $[\, [\text{again}] \, _F \, [t' \,]_F]$.

We said earlier that only topic times are focus alternatives for time variables. The denotation of the focused t' itself is also an alternative. This means that the antecedent for t' must be a topic time. Finding an antecedent for t' is more restricted in the case of focused *again* than in the case of unfocused *again*. The most salient antecedent of t' is now the topic time of the immediately preceding sentence (remember from Section 4.3. that salience is a factor in identifying *again*'s presupposition antecedent). Thus we get the effect that the focus antecedent seems to be identified, as it were, with the presupposition antecedent.

In the example (93), the sentence preceding the sentence with *again* is modalized. I suggest that it does not make available a topic time such that it could act as a presupposition antecedent for *again*. Therefore stressed *again* is inappropriate.

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[10] Not necessarily the immediately preceding sentence, though. (i) below seem ok to me. Intuitively it seems there can be an intervening sentence or utterance if it is clearly irrelevant for *again*. I do not know how to best describe the facts. In the text I simplify by talking about the immediately preceding utterance when I want to refer to the relevant immediately preceding topic time.

(i)   a. Ron sneezed. Hermione came in. Ron sneezed AGAIN.
       b. Smith was a Republican, Jones was a Republican, then there is something missing, Longbottom was a Republican AGAIN...

Finally, the problem with example (94) is that the antecedent for t' on the restitutive reading is also not a topic time. Hence non-focused *again* is ok while focused *again* is not (the presupposition of repetitive *again* is not met anyway, so the repetitive interpretation will be inappropriate in either case).

It seems that in restitutive readings, the antecedent for t' often more implicit (the beginning of a closing as in (60) above or the like). Hence normally, *again* will not be focused on the restitutive reading. Notice that (94) with focus on *again* would be an instance of case (iii) from Section 3.4: a restitutive reading with focused *again* and back-grounded predicate, discussion of which was postponed then. We have now come to the conclusion that it is hard to construct an example with focused *again* and a restitutive reading, and I think that this is right. However, there is an exception to the tendency that focused *again* is not restitutive: we make the prediction that if the immediately preceding utterance is about a time that makes the restitutive presupposition true, the restitutive reading should be ok with focused *again*. The following examples illustrate that this is possible.

(96) a. The shop was closed this morning. Now it is closing AGAIN.
b. It was really hot yesterday, and now the temperature is rising AGAIN.

Several people [in chronological order: Irene Heim (personal communication); Mats Rooth (personal communication) and an anonymous referee for L&P; see also Dimroth (2004, p. 164)] have expressed to me an intuition that there is a similarity between the stressed additive particles *again* and *also* in that they both seem to have an associate (possibly invisible). To illustrate, in the following example (97a) has an interpretation that they were on the Axalp in the fall of 1997, and that at some alternative time, they were on the Axalp. In this interpretation *also* associates with the time interval referred to by "in the fall of 1997". The reading of (97b) is almost the same, with the additional restriction that the alternative time was earlier than fall of 1997. The intuition is that *again* associates with "in the fall of 1997" in (97b) just like *also* associates with that element in (97a). That is, *again* would associate with the topic time of its host sentence.

(97) a. In the fall of 1997, they were ALSO on the Axalp.
b. In the fall of 1997, they were on the Axalp AGAIN.

I have not been able to interpret "association" in the case of *again* literally in a useful way. Note that there is never any flexibilty as to what the prospective associate of *again* is; the time that we need an "alterntative" for is always the time interval in the constituent that *again* syntactically combines with (typically the topic time of the sentence that *again* occurs in). The pair (98) and (99) below illustrates this. While *also* can associate with an expression inside the relative clause (as well as with elements in the matrix clause, depending on intonation), *again* has no such flexibility.

(98) a. I also read a book yesterday that John recommended [in 1995]$_F$.
  b. **PSP**: I read a book yesterday that John recommended at t & $t \neq 1995$.

(99) a. I again read a book yesterday that John recommended in 1995.
  b. **PSP**: I read a book at t' that John recommended in 1995 & $t' <$ yesterday.
  b′ #**PSP**: I read a book yesterday that John recommended at t' and $t' < 1995$.

But we now have an idea for how the "association" intuition arises. The antecedent for the presupposition time t' has to be a focus alternative in the case of focused *again*. In both (97a) and (97b) the context must be such that the previous topic time is the alternative for the additive particle – be it *also* as in (97a) or *again* as in (97b).

To summarize, we arrive at the following picture of repetitive vs. restitutive readings with focused and non-focused *again*: in a vanilla context, a focused predicate can make the restitutive reading prominent, and a backgrounded predicate can make the repetitive reading prominent, through the standard focus presupposition. Focused *again* has a tendency to be repetitive through the topic time requirement on the presupposition antecedent triggered by focus. All tendencies can be overridden in suitable contexts.

I would like to acknowledge that these conclusions remain somewhat tentative at this point. Open questions remain regarding the assumptions underlying the arguments I pursued. One is salience: is finding an antecedent for the presupposition time t' governed by the same criteria as findung an antecedent for a pronoun, as I had suggested? More research needs to be done regarding time variables in alternative sets. Finally, I wonder whether the focus presupposition

and *again*'s presupposition can be treated on a par, as the framework used here does. These questions must be left for future work.

6. SUMMARY AND CONCLUSION

Regarding our initial enterprise, the following summarizes the outcome:

(i) The focus effect with *again* is not a problem. It follows from the standard interpretation of focus in conjunction with general mechanisms of discourse interpretation. It is not necessary and not even desirable to formally disambiguate such sentences.

In so far as the analysis of the focus-on-*again* data is convincing, its theoretical ingredients receive further support. An interesting point are anaphoric presuppositions. We have seen a further development of the observations made by Kripke, Heim and Kamp and Rossdeutscher:

(ii) The presupposition of *again* depends on an anaphoric element. That element calls for an antecedent; it is the anchor for discourse inferences triggered by *again*; it can be focused through focus on *again*.

The case study has revealed an interesting issue of more general relevance regarding focus alternatives:

(iii) Focus alternatives to purely presuppositional elements are other purely presuppositional elements and a semantically empty alternative. We have yet to formulate a general theory of presuppositional elements in alternative sets.

I hope that further research on the interaction of focus and presuppostion will clarify the remaining open questions.

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