Nonspecific promises: Restitutive *again* and intensional transfer-of-possession verbs[1]

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Abstract. In this paper I describe a novel pattern of infelicity, in which the restitutive reading of the adverbs *again* and *back* is infelicitous when combined with intensional 'transfer-of-possesion' verbs (e.g. *promise*, *offer*) that take nonspecific objects. I offer one possible analysis of this phenomenon under the so-called "'re'-domain" framework of Zwarts (2019), a lexical analysis of the *again* ambiguity that describes the restitutive presupposition with reference to a semantic path. This predicts a key role for the theme of the modified event, leading to presupposition failure in cases where no unique theme can be identified.

Keywords: paths, restitutive readings, again, back, transfer-of-possession verbs

1. Introduction

The adverb *again* has long been known to receive multiple interpretations (see e.g. Morgan, 1969; McCawley, 1971). Most analyses identify two, distinguished by the presuppositions they give rise to, which are often referred to as 'repetitive' and 'restitutive'. Some consider these two interpretations to result from a structural ambiguity (e.g. von Stechow, 1995, 1996), others from a lexical ambiguity (e.g. Fabricius-Hansen, 2001). A comparable restitutive interpretation is also available for the adverb *back*.

In this paper, I describe a novel "Intensional Restitution Effect", under which the restitutive interpretation of *again/back* is infelicitous in combination with intensional transfer-of-possession verbs (e.g. *promise*, *offer*) in particular contexts. I argue that this effect can receive a natural account under Zwarts's (2019) path-based analysis of the "'re'-domain", in combination with a modal semantics for transfer-of-possession verbs in the same vein as Kratzer (2013). In Section 2, I summarize two points of relevant background, then establish a description of what I will refer to as the "Intensional Restitution Effect". In Section 3, I introduce the framework of Zwarts (2019), which provides a lexical account of the *again* ambiguity, and in Section 4, I argue that under this framework, the Intensional Restitution Effect can be understood as presupposition failure, occurring when the transfer event lacks a unique theme.

2. The intensional restitution effect

2.1. Restitutive *again/back*

As mentioned, the repetitive and restitutive interpretations of *again* can be distinguished by the presuppositions they give rise to. Example (1) is compatible with two distinct interpretations: the repetitive reading in (1a) presupposes a previous event of Mary's giving the book to John, while the restitutive reading in (1b) presupposes a previous state of John's having the book.

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(1) Mary gave John the book again.
   a. Mary gave John the book, and she'd given it to him before. *Repetitive*
   b. Mary gave John the book, and he'd had it before. *Restitutive*

A restitutive interpretation is also available for *back*,[2] which in (2a) likewise presupposes a previous state of John's having the book. It is this restitutive interpretation, found with both *again* and *back*, that will be of interest in the data that follows.

(2) Mary gave John back the book.
   a. Mary gave John the book, and he'd had it before. *Restitutive*

2.2. Intensional ToP verbs and existential import

'Transfer-of-possession' verbs (henceforth 'ToP verbs') can be divided into two classes: extensional and intensional.[3] Extensional ToP verbs include those like *give*, *pass*, and *sell*; Intensional ToP verbs include *promise*, *offer*, *owe*, and others. These two classes can be distinguished by the property of existential import of the object. A sentence containing a verb V has the property of existential import of the object if the truth of the proposition that it describes entails the existence of V's object. To illustrate, let's consider the extensional examples in (3) below. In any scenario that makes (3a) true, there must exist some book that was given. Likewise, if (3b) is true, there must exist a car that was sold. Because of this, sentences containing these verbs can be said to have existential import of the object.

(3) a. Mary gave John a book. *Extensional ToP verbs*
   b. Harry sold Agatha a car.

Intensional verbs, like those in (4), do not behave in this way. (4a) does not necessarily describe a scenario in which there exists a particular bottle that was promised. It may instead describe a promise that can be satisfied by any bottle of wine. Likewise, (4b) may describe a scenario in which there is no particular cup of tea offered—in fact, it's quite natural to assume that no cup of tea yet exists. As the truth of these sentences does not entail the existence of the object, the sentences in (4) can be said to lack existential import of the object.

(4) a. Emma promised Frank a bottle of wine. *Intensional ToP verbs*
   b. Georgina offered Harriet a cup of tea.

[2]Like *again*, *back* is also ambiguous between multiple interpretations. In addition to the restitutive and 'returnative' readings discussed in detail below, these include: (i) that an action is done in response to another, (ii) that a movement action takes place with the subject's back leading, and (iii) that an action proceeds in the opposite of its canonical direction. Zwarts (2019) calls these 'responsive', 'rearward', and 'retrograde' readings, respectively.

(i) Mary insulted me. I glared back at her. *'Responsive'*

(ii) Startled, I took a step back. *'Rearward'*

(iii) Count back from 100 to 1. *'Retrograde'*

[3]These are sometimes called 'change of possession verbs'. Levin (1993: 138–140) refers to the extensional members of this family as "*Give* verbs" and the intensional members as "Verbs of future having".

In this paper, I will use shorthand terms to refer to particular kinds of event descriptions. By "specific promise", for example, I mean an event of *promising* with a specific object: that is, one for which there exists one particular individual that can fulfill it. By "nonspecific promise", I mean a promise with a nonspecific object: that is, one that can be fulfilled by any individual with a particular property. This distinction will be key to the discussion that follows.

2.3. Restitution in specific and nonspecific promises

Let's now combine the two elements just discussed. How does the restitutive interpretation of *again/back* manifest when combined with intensional verbs? In certain cases—in particular, for specific promises—the meaning surfaces precisely as expected. Consider the context in (5), in which both (6a) and (6b) are true and felicitous.[4]

(5) **Context:** Emma, an amateur painter, asked her neighbor Frank for a bottle of wine to paint in a still life. Frank had never given anything to Emma before, but he had a bottle of wine in his pantry. Frank happily gave Emma the bottle, but he asked for the bottle to be returned to him afterwards. Emma promised that she would return it.

(6) a. Emma promised Frank the bottle of wine again.
b. Emma promised Frank the bottle of wine back.

Here there exists a specific bottle that was promised. This interpretation is reinforced by the definite object, though it's also compatible with a specific indefinite object as in (7)—particularly if the speaker is ignorant of the identity of the specific bottle.

(7) Emma promised Frank a bottle of wine again/back.

In either case, we are dealing with a specific promise, so examples (6a–b) and (7) tell us the same thing: an intensional ToP verb with a specific object is compatible with the restitutive interpretation of *again/back*. This parallels the behavior of extensional ToP verbs like *give*.

Let's consider the alternative: the combination of restitutive *again/back* with a nonspecific promise. The context in (8) disambiguates towards a restitutive reading of *again* and a nonspecific promise interpretation. Surprisingly, (9) is infelicitous.[5]

[4]There is some degree of variability regarding the judgments in (6). A majority of the English speakers with whom I've discussed this data agree that both examples in (6) are grammatical; a minority find (6a) to be degraded. I speculate that this may be due to a blocking effect, where the availability of *back* blocks the use of *again*, though I cannot yet say for certain. So, although the true empirical picture is a bit muddier, I will for ease of exposition treat examples like (6a) and (6b) as equivalent throughout this paper.

[5]Some speakers find (9) to be felicitous under an alternative reading of *back*: the reading Zwarts (2019) calls 'responsive'. This reading can be paraphrased with the English adverbial *in return*, and is illustrated in (i).

(i) Mary did me a favor. I did her a favor back/in return/#again.

(8) **Context:** The guests had begun arriving for Emma's dinner party when she realized she'd forgotten to buy any wine. She quickly asked her neighbor Frank for help. Frank had never given Emma anything before, but tonight he happily gave her a bottle of wine, on the condition that she replace it with another. Emma promised that she would.

(9) #Emma promised Frank a bottle of wine again/back.

The context in (8) appears to support a restitutive meaning, and a standard restitutive paraphrase, like (10), is true and felicitous in context. Yet (9) is not. Why should this be the case?

(10) Emma promised Frank he would have a bottle of wine again.

This is not due to the choice of verb in context, or to the combination of the intensional ToP verb with its arguments, as the simple description in (11) remains felicitous. Rather, some interaction involving the adverb itself must lead to the infelicity of (9).

(11) Emma promised Frank a bottle of wine.

Note that this effect is not peculiar to *promise*; it appears to hold for all intensional ToP verbs. For example, (13) shows that *offer* displays the same behavior.[6]

(12) **Context:** Luke was house-sitting for his friend Judy, but he forgot to water her houseplant. Sadly, it died. To make up for it, Luke offered to provide a replacement plant.

(13) Luke offered Judy a plant (#again/back).

So for intensional ToP verbs in general, there is a clear split. With a specific promise, restitutive *again/back* is felicitous. With a nonspecific promise, restitutive *again/back* is not felicitous. I refer to this pattern as the 'Intensional Restitution Effect'[7], and I take it to result from some interaction between the specificity of the object and the restitutive meaning of *again/back*.

Before moving on, note that repetitive *again* is freely available regardless the specificity of the object. A repetitive interpretation of (14), for example, is possible whether or not a specific bottle was promised. As such, I will not discuss repetitive *again* further.

(14) Emma promised Frank a bottle of wine again.

3. Semantic paths and restitutive *again*

The Intensional Restitution Effect is, as seen above, a pattern in which intensional ToP verbs that take nonspecific objects are systematically incompatible with the restitutive interpretation of *again/back*. In this section, I review the "'re'-domain" framework of Zwarts (2019), which

[6]Other common examples of intensional ToP verbs include *allocate*, *bequeath*, and *owe*.

[7]A somewhat similar pattern has been observed with extensional verbs (see Dobler, 2008; Csirmaz, 2015; Iyer, 2018), in which restitutive interpretations for *again*/similar lexical items are unavailable when combined with nonreferential objects. It remains to be seen to what extent these examples may be unified with the intensional examples discussed here, though such a treatment does appear plausible.

describes the restitutive presupposition using a semantic path. As the theme plays a key role in the evaluation of such paths, I will argue in Section 4 that the close connection between theme and path is ultimately responsible for the infelicity of examples like (9) above.

3.1. Restitution in the 're'-domain (Zwarts 2019)

Zwarts (2019) describes a set of distinct but interrelated meanings broadly relating to repetition or reversal, which he groups together in the so-called "'re'-domain". This framework was developed to account for the polysemy of Dutch *terug* 'again, back', which has four readings in Standard Dutch and six in Belgian Dutch. Here, I adopt certain of his proposed denotations for English *again* and *back*. Among the six readings Zwarts discusses are a standard repetitive reading, two readings that might be considered restitutive, and several additional readings that can be expressed in English by lexical items such as *backwards* or *in return*.

The repetitive reading Zwarts describes, given in (15), is essentially the same denotation proposed by von Stechow (1995, 1996) for *again*. It takes some property of events E and event e, and presupposes the existence of some previous event e' with the same property E. As this is rather uncontroversial, I will not discuss the repetitive reading at length.

(15) $[\![\text{again}_{\text{REPETITIVE}}]\!] = \lambda E \lambda e : \exists e'[e' < e \wedge E(e')].[E(e)]$

Instead, let us focus on the readings that might be considered "restitutive". Although most authors describe a single restitutive reading, Zwarts takes a more fine-grained view, identifying separate "restitutive" and "returnative" readings. These two readings are similar to existing proposals involving so-called "counterdirectional" readings of *again*. (See e.g. Fabricius-Hansen 2001, Patel-Grosz and Beck 2019.) Effectively, Zwarts's "restitutive" reading is a scalar counterdirectional reading, while Zwarts's "returnative" is a locational counterdirectional reading.

Zwarts's "restitutive" reading, as in (16), describes a reversal of some previous scalar change. For example, the train moves from a higher degree of speed to a lower one, and restitutive *again* presupposes a previous event in which the train moved from a lower to a higher degree of speed. Or, the door moves from a lower degree of openness to a higher degree, and restitutive *back* presupposes an event in which the door moved from a higher to a lower degree of openness.

(16) Restitutive readings:
   a. (The train sped up, and then) the train slowed again.
   b. (I closed the door, and then) the door opened back up.

The "returnative" reading describes a reversal of some previous physical movement. In (17a), John travels to Montreal, and *again* presupposes a prior event in which John departed from Montreal. In (17b), the ball moves to Claude, and *back* presupposes a prior event in which the ball moved away from Claude.[8]

[8] As mentioned in Section 2.3, some English speakers appear to prefer *back* over *again* for this interpretation.

(17) Returnative readings:
   a. (John drove from Montreal to Ottawa, and then) John drove to Montreal again.
   b. (Claude's ball rolled over to Marie, and then) Marie kicked the ball back to Claude.

To be slightly more precise, I will for the remainder of this paper use the terms restitutive and returnative to refer to the readings identified by Zwarts, rather than conflating the two readings into one, as is sometimes done in other literature.[9]

To describe these readings formally, Zwarts makes use of the notion of a semantic path. A path is a representation of movement or development over the course of an event. The two types of readings illustrated in (16–17) are distinguished by the type of path they utilize: restitutive readings indicate a return along a scalar path, or SPATH, while returnative readings indicate a return along a physical path, or LPATH. The type of path is in fact the only distinction between the two readings under Zwarts's analysis. In other respects, these two readings are identical.

First, consider the restitutive denotation in (18). This takes as its arguments a property of events E and an event e. It introduces a presupposition that there exists some previous event e' with a property of events given by the free variable E',[10] and whose scalar path is the reverse of the scalar path of e. When combined with an event like (16a), which describes a change along a scalar path (a decrease in speed), the presupposition is that in some previous event, the reverse change occurred (an increase in speed).

(18) $[\![\text{again}_{\text{RESTITUTIVE}}]\!] = [\![\text{back}_{\text{RESTITUTIVE}}]\!] =$ (Zwarts, 2019)
$\lambda E \lambda e : \exists e'[e' < e \wedge E'(e') \wedge \text{REVERSE}(\text{SPATH}(e), \text{SPATH}(e')))].[E(e)]$

The returnative denotation in (19) introduces a nearly-identical presupposition, with the distinction that it is the physical path that is reversed. When combined with an event like (17a), which describes movement along a spatial path (travel to Montreal), the presupposition is that in some previous event, the reverse path was followed (travel away from Montreal).

(19) $[\![\text{again}_{\text{RETURNATIVE}}]\!] = [\![\text{back}_{\text{RETURNATIVE}}]\!] =$ (Zwarts, 2019)
$\lambda E \lambda e : \exists e'[e' < e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e')))].[E(e)]$

3.2. What is a path?

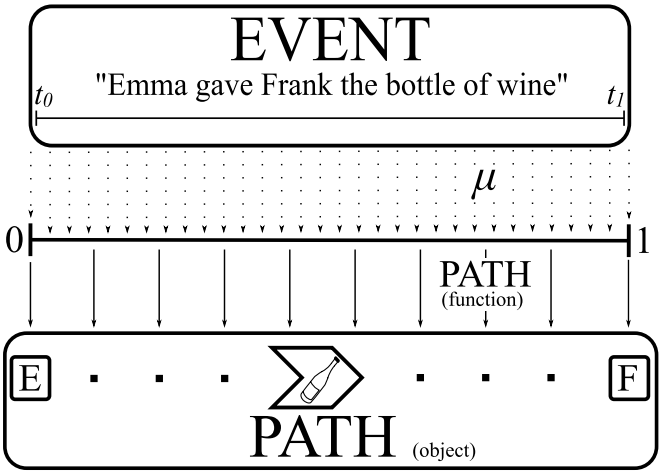
I have glossed over the meaning of REVERSE above, simply invoking an intuitive sense of 'reversal'. This is not quite correct. The condition imposed by REVERSE is, if anything, more permissive than intuition might suggest—though before we can grasp the exact meaning of REVERSE, we must first consider the nature of a semantic path in more detail. What precisely is a path, and how does it relate to the event it describes?

A path is a set of abstract points along some continuum, which represents movement or development over the course of an event. During an event e, THEME(e) moves/develops along

[9] To use two well-known examples, von Stechow (1996) applies the term "restitutive" in contexts involving scalar change, while Beck and Johnson (2004) apply the term "restitutive" to contexts involving locational change.
[10] This property may be the same as that represented by E, though they are often different.

PATH(e).[11] The relationship between event and path can be visualized as in (20). Points in the time course of e are related, by a mapping function μ, to points in the interval [0,1]. The PATH function then relates points in that interval to points in the path itself. And the theme, in this case *the bottle of wine*, moves from point to point, from one endpoint of the path to the other.

(20)



This is formalized in the predicate of events TRAVERSE (Zwarts, 2019). TRAVERSE(e) is assumed to be true of all events that have paths, and it essentially fulfills two separate functions. First, it ensures that both the time course of the event and a path can be mapped to the interval [0,1], establishing a correspondence between the two. Second, it ensures that the event's theme is located at successive points on the path at successive moments over the time course of the event. Effectively, an event of 'traversal'—an event with an associated path—requires a theme to travel it. This link will be crucial to the analysis I develop.

(21) For every event e, TRAVERSE(e) = 1 iff there is a continuous function μ from TIME(e) = $[t_0,t_1]$ onto [0,1] such that $\mu(t_0) = 0$ and $\mu(t_1) = 1$, and for every $t_i \in [t_0,t_1]$ for which the PATH function is defined, AT(THEME(e),t_i,PATH(e)($\mu(t_i)$)), i.e., THEME(e) is located at PATH(e)($\mu(t_i)$) at t_i. (Zwarts, 2019)

As seen previously, Zwarts (2019) uses semantic paths to describe the restitutive and returnative meanings of *again/back*. Both lexical entries, reprinted below, take as arguments a property of events E and an event e, and presuppose the existence of some event e' which occurred previously to e. The previous event e' has the property of events given by the free variable E'.[12] And the paths associated with e and e' must stand in the relation described by REVERSE, which is effectively a condition requiring two paths to overlap in a particular way.

(18) $[\![\text{again}_{\text{RESTITUTIVE}}]\!] = [\![\text{back}_{\text{RESTITUTIVE}}]\!] =$ (Zwarts, 2019)
$\lambda E \lambda e : \exists e'[e' < e \wedge E'(e') \wedge \text{REVERSE}(\text{SPATH}(e), \text{SPATH}(e')))].[E(e)]$

[11] I use PATH(e) as a generic stand-in for the three thematic functions employed by Zwarts: SPATH(e), LPATH(e), and APATH(e) return scalar paths, physical paths, and 'action paths' respectively. This should not be confused with the two-place PATH predicate employed by Zwarts, e.g. within the denotation in (21) below, which takes an event e and a point in the interval [0,1], and returns point on the path associated with that point in the interval [0,1].

[12] e and e' need not have the same property of events. An event of *opening again*, for example, may presuppose a previous event of *closing*.

(19) $[\![\text{again}_{\text{RETURNATIVE}}]\!] = [\![\text{back}_{\text{RETURNATIVE}}]\!] =$ (Zwarts, 2019)
$\lambda E \lambda e : \exists e'[e' < e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e')))].[E(e)]$

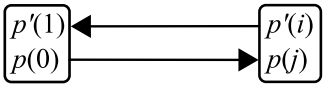
What precisely does it mean for two paths to be each other's 'reverse'? In ordinary language, this is somewhat intuitive, but the formulation of REVERSE given in (22) requires some explanation. This definition ensures that $p(0)$, the starting point of path p, is identical to $p'(1)$, the end point of path p'.[13] In addition to that point of overlap, REVERSE also ensures that there is, at minimum, one additional point of intersection, located at point j on path p and point i on path p'. For any pair of paths that satisfy these criteria, REVERSE will return true.

(22) REVERSE: For any two paths p and p', REVERSE(p, p') iff: $p(0) = p'(1)$, and there is a $j \in (0,1]$ and an $i \in [0,1)$ such that $p(j) = p'(i)$. (Zwarts, 2019)

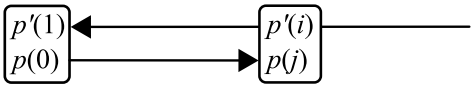
Effectively, then, REVERSE guarantees a minimum of two points of overlap between the two paths. Why does it not ensure more significant overlap instead? The reason is that restitutive and returnative readings do not require it. Consider the examples schematized below in (23). (23a) fits with an intuitive conception of 'reversal', where the theme (the speaker) retraces exact same path in the opposite direction (p' = the physical path from home to the store; p = the physical path from the store to home). In this case, the overlap is total or near-total.

(23) Paths that satisfy REVERSE:

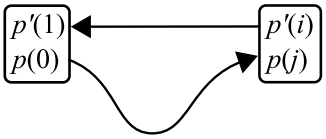
a. "I walked to the store. Then I walked home again (by the same route)."



b. "Last week Mary got very sick. Today she recovered again, though not completely. (Within a few days she'll be at full health.)"



c. "I drove from Montreal to New York. Then I drove back to Montreal (via Boston)."



(23b), however, shows that the two paths need not share the same length or extent. Here the theme (Mary) travels a significant distance in one direction on the path p' (the scalar path from full health to extreme sickness) and only travels a short distance in the opposite direction on the path p (from sickness to health). And (23c) shows an example that potentially has exactly two points of overlap. Here the theme (the speaker) travels a direct path p', and returns along a more circuitous path p. The definition of REVERSE is formulated in such a way as to account for these looser examples of 'reversal', as well as the more highly overlapping cases.

[13]The notation $p(0) = p'(1)$ is simply shorthand for $\text{PATH}(e)(0) = \text{PATH}(e')(1)$. (Compare to the definition of TRAVERSE above.) Both $p(0)$ and $p'(1)$ identify points on their respective paths.

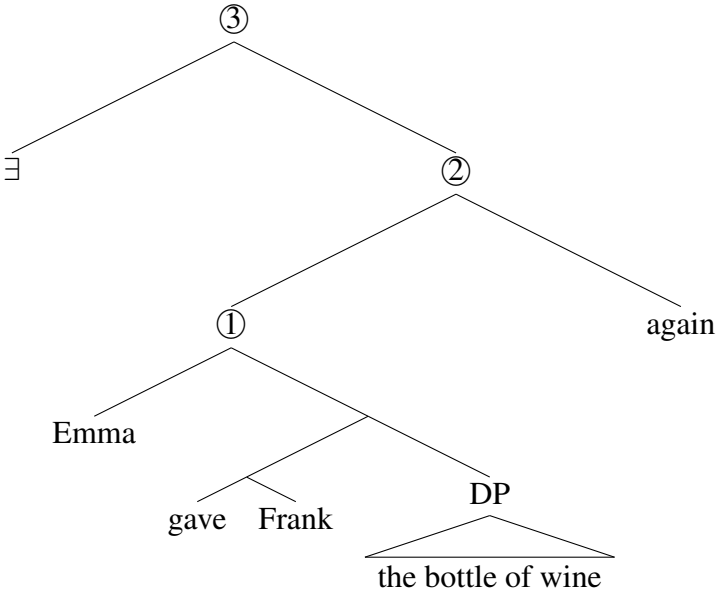
3.3. Applying path-based *again/back*

We can now consider a sample derivation using a path-based denotation for *again/back*. For brevity, I illustrate with the returnative denotation, reprinted below (although given the parallelism, the discussion that follows is equally applicable to the restitutive denotation). This is applied in (24) to a simplified example involving *give*. Here, *again* combines with a property of events that represents Emma's giving of the bottle to Frank. This yields a property of events similar to the original,[14] though it also incorporates the presupposition of returnative *again* that there exists some prior event whose path is the reverse of the current event.[15]

This appears to correctly capture the returnative interpretation of *again/back*. It results in a sentence that is true if and only if two conditions are met. First, there must exist an event e in which Emma gave Frank the bottle of wine.

(19) $[\![\text{again}_{\text{RETURNATIVE}}]\!] = [\![\text{back}_{\text{RETURNATIVE}}]\!] =$ (Zwarts, 2019)
$\lambda E \lambda e : \exists e'[e' < e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].[E(e)]$

(24) "Emma gave Frank the bottle of wine again."



[14]Which is existentially closed by an operator ∃, which returns true if there exists some event e with the property of events described by the complement of ∃. I use v for the semantic type of events; $\langle v,t\rangle$ for properties of events.

(i) Where $[\![\phi]\!]^w$ is of type $\langle v,t\rangle$, $[\![\exists(\phi)]\!]^w = 1$ iff $\exists e[[\![\phi]\!]^w(e) = 1]$

[15]In this derivation and those that follow, the subscript w added to the precedence relation within the denotation of returnative *again/back* indicates that the two events are part of the same world. I.e., "$e' <_w e$" holds between two events e' and e such that they are in the same world w and e' precedes e.

$[\![①]\!]^w = \lambda e.\text{gave}_w(\text{Frank})(\text{the bottle of wine})(\text{Emma})(e)$

$[\![\text{again}_{\text{RETURNATIVE}}]\!]^w = \lambda E_{\langle v,t\rangle}\lambda e : \exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].[E(e)]$

$[\![②]\!]^w = \lambda e : \exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].[\![①]\!]^w(e) = 1$

$[\![\exists(\phi)]\!]^w = 1$ iff $\exists e[[\![\phi]\!]^w(e) = 1]$ (where $[\![\phi]\!]^w$ is of type $\langle v,t\rangle$)

$[\![③]\!]^w = 1$ iff $\exists e[\text{gave}_w(\text{Frank})(\text{the bottle of wine})(\text{Emma})(e) \wedge \underline{\exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))]}]$
(undefined if the underlined portion is false in w)

Second, it must be the case that there also exists a previous event e', in which the theme, the bottle of wine, traveled a path in the reverse direction. As e involves the bottle of wine traveling into Frank's possession, e' must involve the bottle of wine traveling out of Frank's possession.[16]

Having seen that Zwarts's path-based denotations for returnative and restitutive *again/back* derive the desired presupposition in simple extensional cases, we can now turn our attention back to the cases of central interest to this paper: those involving intensional ToP verbs.

4. Paths and *promises*

In this section, I will apply the path-based restitutive/returnative readings of *again* and *back* to sentences involving intensional ToP verbs. The semantic composition of such examples, even those with nonspecific promises, is not obviously pathological. However, a careful analysis of the presuppositions introduced by these denotations reveals that presupposition failure is expected in a certain subset of cases—precisely those corresponding to the infelicitious "nonspecific promise" readings under the Intensional Restitution Effect.

4.1. A modal semantics for *promise*

For the meaning of *promise*, I will assume for now the simplified denotation in (25), which relates a theme x, promisee y, and promiser z to an event e. Following Kratzer (2013), this incorporates a modal whose domain comprises all possible worlds in which the norms of *promising* are met.[17] Effectively, $f_{\text{norm}}(e)$ picks out as the modal base all possible worlds wherein the promise is ultimately satisfied.[18] And the *promising* event will, in all worlds in which the *promise* is satisfied, cause there to exist a state s in which the promisee y has the theme x.

(25) $[\![\text{promise}]\!] = \lambda x\lambda y\lambda z\lambda e.\text{promise}(e) \wedge \text{agent}(e)(z) \wedge \forall w(w \in f_{\text{norm}}(e) \rightarrow \exists s(\text{cause}(e)(s)(w) \wedge \text{have}(x)(y)(s)(w)))$

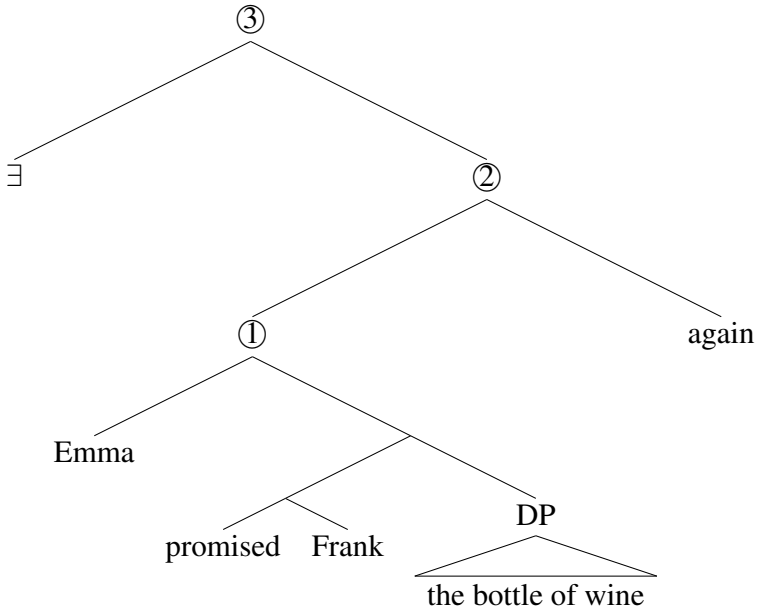
[16] This necessitates that at some point during e', if only the initial point, Frank had the bottle. In short, this entails the truth of what is often thought to be the restitutive presupposition: that there exists a previous state of (in this case) Frank's having the bottle. The path-based presupposition as written appears slightly stricter, but for practical purposes it seems equivalent to the traditional (stative) restitutive presupposition.

[17] For a promise, such norms might include: that the promise is honored, that it's not refused by the promisee, etc.

[18] This need not include the actual world, as promises can of course be broken.

When the object is definite, *promise* slots neatly into the same basic structure as *give*. For (26) below to be true, there are once again two conditions. First, there must exist some event e in which Emma promises Frank the bottle. This event e will have a path, along which its theme, *the bottle of wine*, travels from Emma to Frank—at least in those worlds where the promise is fulfilled. Second, there must exist some prior event e' in which *the bottle of wine* travels away from Frank. Just as before, this denotation appears adequate.

(26) "Emma promised Frank the bottle of wine again."



$[\![①]\!]^w = \lambda e.\text{promised}_w(\text{Frank})(\text{the bottle of wine})(\text{Emma})(e)$

$[\![\text{again}_{\text{RETURNATIVE}}]\!]^w = \lambda E_{\langle v,t\rangle}\lambda e : \exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].[E(e)]$

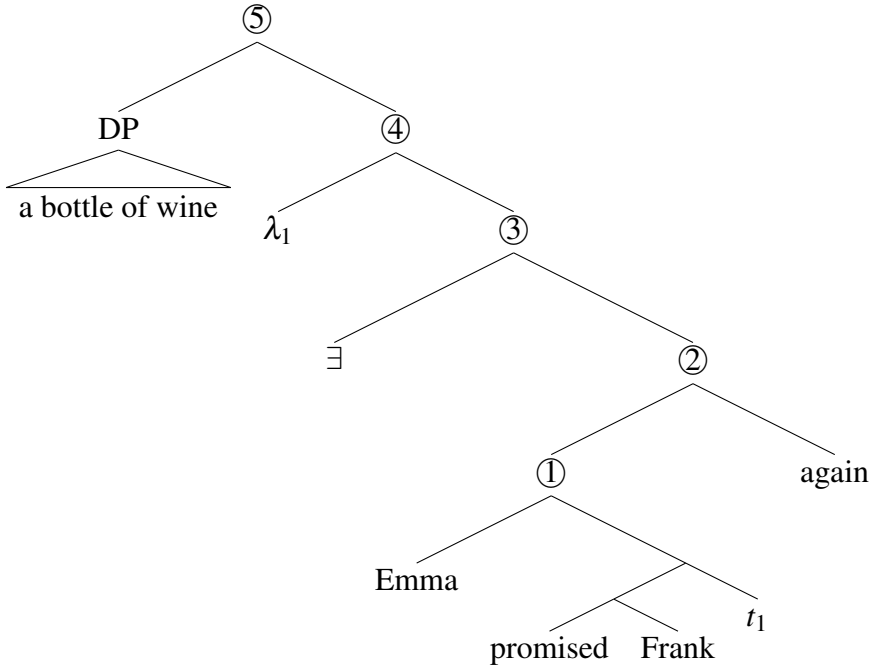
$[\![②]\!]^w = \lambda e : \exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].[\![①]\!]^w(e) = 1$

$[\![\exists(\phi)]\!]^w = 1$ iff $\exists e[[\![\phi]\!]^w(e) = 1]$ (where $[\![\phi]\!]^w$ is of type $\langle v,t\rangle$)

$[\![③]\!]^w = 1$ iff $\exists e[\text{promised}_w(\text{Frank})(\text{the bottle of wine})(\text{Emma})(e) \wedge \underline{\exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))]}]$
(undefined if the underlined portion is false in w)

While (26) involves a definite object, this approach can capture examples involving specific indefinite objects with minimal modification. To do so, we can simply replace the object DP with a trace, which is then bound into by a wide scope indefinite higher in the structure, deriving a specific interpretation. This is illustrated in (27).

(27) "Emma promised Frank a (particular) bottle of wine again."



$[\![①]\!]^{w,g} = \lambda e.\text{promised}_w(\text{Frank})(g(t_1))(\text{Emma})(e)$

$[\![\text{again}_{\text{RETURNATIVE}}]\!]^w = \lambda E_{\langle v,t\rangle}\lambda e : \exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].[E(e)]$

$[\![②]\!]^{w,g} = \lambda e : \exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].$
$[\![①]\!]^{w,g[1\to x]}(e) = 1$

$[\![\exists(\phi)]\!]^w = 1$ iff $\exists e[[\![\phi]\!]^w(e) = 1]$ (where $[\![\phi]\!]^w$ is of type $\langle v,t\rangle$)

$[\![③]\!]^{w,g} = 1$ iff $\exists e[\text{promised}_w(\text{Frank})(t_1)(\text{Emma})(e) \wedge \underline{\exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))]}]$
(undefined if the underlined portion is false in w)

$[\![④]\!]^{w,g} = \lambda x.[\![③]\!]^{w,g[1\to x]}$

$[\![⑤]\!]^{w,g} = 1$ iff $\exists y[\text{bottle-of-wine}(y) \wedge [\![④]\!]^{w,g}(y) = 1]$

While the derivations in (26) and (27) describe the intended meanings of specific promises, they are unable to capture the content of a nonspecific promise. To do this, we must revise our denotation for *promise*. Here I adopt the proposal of Kratzer (2013), which allows for nonspecific promises by virtue of taking as its object a property of type $\langle e,t\rangle$, as in (28).[19]

(28) $[\![\text{promise}]\!] = \lambda P\lambda y\lambda z\lambda e.\text{promise}(e) \wedge \text{agent}(z) \wedge \forall w(w \in f_{\text{norm}}(e) \to \exists x(P(x)(w) \wedge \exists s(\text{cause}(e)(s)(w) \wedge \text{have}(x)(y)(s)(w))))$ (adapted from Kratzer, 2013)

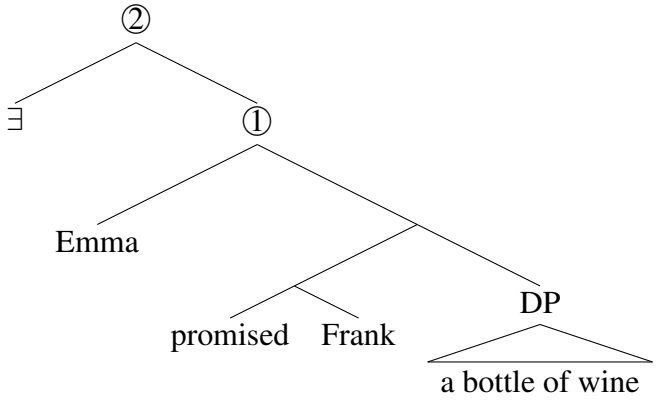
This denotation includes an existential presupposition, which takes scope below the norm-based modal, thereby presupposing that in each possible world where the promise is fulfilled, there exists some individual x with property P to be transferred. Crucially, this need not be the same

[19] I have simplified the presentation of Kratzer's proposal by combining into a single lexical entry what Kratzer divides across three: a "transfer-of-possession core" containing the norm-based modal and everything within its scope, an event description given by *promise*, and a Neo-Davidsonian agent function.

individual across all worlds in $f_{\text{norm}}(e)$—and this variation in the identity of x across possible worlds allows for any individual with the correct property to satisfy the promise.

Let's first test this denotation in a derivation that is expected to result in a felicitous sentence: (29), which does not contain *again/back*. To satisfy the new denotation of *promise*, the object is treated as a property of individuals, which in this case is simply assumed to be "λx.bottle-of-wine$(x)(w)$": that is, the property of being a bottle of wine in w. This sentence is true if and only if there exists a promising event e, whose agent is Emma, and as a result of which Frank comes to possess some bottle of wine or other in all possible worlds consistent with the fulfillment of the promise. This is exactly the intended, nonspecific interpretation.

(29) "Emma promised Frank a bottle of wine."



$[\![\text{a bottle of wine}]\!] = \lambda x.\text{bottle-of-wine}_w(x)$

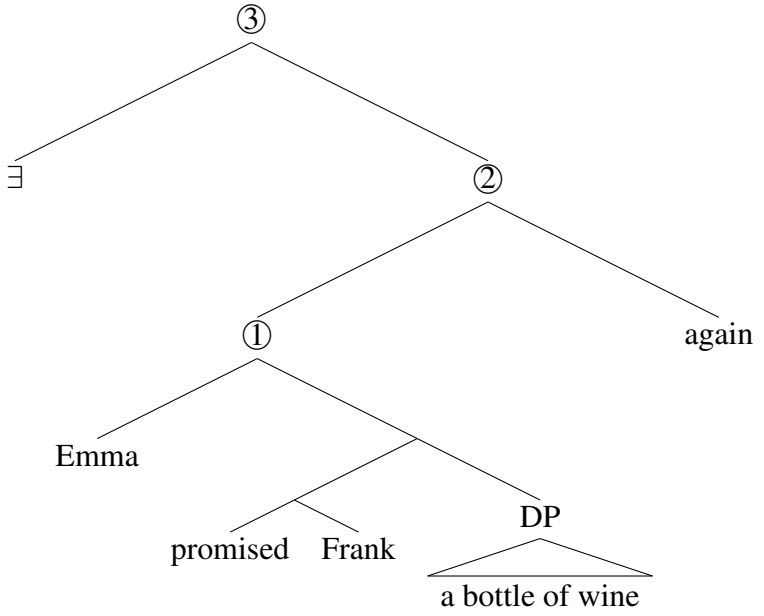
$[\![①]\!]^w = \lambda e[\text{promise}_w(\text{Frank})(\text{bottle-of-wine})(\text{Emma})(e)]$

$[\![②]\!]^w = 1$ iff $\exists e[\text{promise}_w(\text{Frank})(\text{bottle-of-wine})(\text{Emma})(e)]$

The specific interpretation of *promise* can also be derived using this approach. To so do, I assume that it is possible to type-shift a specific object of type e, such as *the bottle of wine*, into a property of type $\langle e,t\rangle$ that is true of only that individual: that is, the property of being that particular bottle and only that bottle. (For example: "$\lambda(x).x$ is this particular bottle of wine".) With this change, all worlds in which the promise is fulfilled must contain the same single bottle of wine that fulfills the new, more specific property. This type-shifting approach obviates the need for distinct denotations for specific and nonspecific promises.

With a denotation for *promise* that is capable of describing both specific and nonspecific promises, we can now examine those cases whose infelicity is central to the Intensional Restitution Effect. These cases result when the restitutive reading of *again/back* is combined with an intensional ToP verb taking a nonspecific object. Such a structure is illustrated in (30). The object, *a bottle of wine*, is a property, but aside from this change the structure is similar to (26) above. It is not obviously pathological, despite the fact that this example is infelicitous.

(30) "#Emma promised Frank a bottle of wine again/back."



$[\![①]\!]^w = \lambda e[\text{promise}_w(\text{Frank})(\text{bottle-of-wine})(\text{Emma})(e)]$

$[\![②]\!]^w = \lambda e : \exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))].[\![①]\!]^w(e) = 1$

$[\![③]\!]^w = 1$ iff $\exists e[\text{promised}_w(\text{Frank})(\text{bottle-of-wine})(\text{Emma})(e) \wedge \underline{\exists e'[e' <_w e \wedge E'(e') \wedge \text{REVERSE}(\text{LPATH}(e), \text{LPATH}(e'))]}]$

(undefined if the underlined portion is false in w)

So why should the sentence represented in (30) be infelicitous? It does not seem that this infelicity arises from a failure of semantic composition. Perhaps the obvious next step is to determine whether the presupposition of *again* is in fact met. That question is a bit less straightforward. After all, it may seem plausible that this presupposition should be satisfied in any world where some bottle travels the path from Emma to Frank, and where some bottle travels the reverse of that path. In the following section, however, I review the key role that the theme of an event plays in the evaluation of semantic paths, and I argue that the infelicity observed in examples like (30) arises because a nonspecific theme is incapable of satisfying the presupposition of restitutive/returnative *again*.

4.2. Intensional *promising*: Paths without themes

As outlined in Section 2, the felicity of sentences that combine intensional ToP verbs with the restitutive and returnative senses of *again/back* depends on the specificity of the theme. And as discussed is Section 3, the restitutive and returnative readings (as modeled by Zwarts 2019) introduce presuppositions that make reference to semantic paths—paths which require a theme to traverse them. The key role of the theme in both cases is, I argue, not a coincidence.

My hypothesis is that the evaluation of a semantic path requires a *unique* theme to travel it. If uniqueness of THEME(e) is not met, no path can be associated with the event e, and the restitu-

tive and returnative presuppositions of *again/back* cannot be evaluated. Intensional ToP verbs, due to their modal semantics, do not have unique themes when combined with nonspecific objects, and therefore the events they describe cannot be associated with paths. This reduces the Intensional Restitution Effect to a case of presupposition failure.

I will begin by addressing the need for a unique theme. Why should this be required? Here, we must simply consider the definition of the predicate of events TRAVERSE, reprinted below. In order for TRAVERSE to hold of an event, we must be able to follow the location of THEME(e) as it proceeds through successive points on the path at corresponding points in time. Without the ability to track THEME(e), TRAVERSE(e) will be undefined.

(21) For every event e, TRAVERSE(e) = 1 iff there is a continuous function μ from TIME(e) = $[t_0,t_1]$ onto [0,1] such that $\mu(t_0) = 0$ and $\mu(t_1) = 1$, and for every $t_i \in [t_0,t_1]$ for which the PATH function is defined, AT(THEME(e),t_i,PATH(e)($\mu(t_i)$)), i.e., THEME(e) is located at PATH(e)($\mu(t_i)$) at t_i.

TRAVERSE is assumed to hold of every event that is associated with a semantic path (Zwarts, 2019). If for an event e, TRAVERSE(e) does not hold, then e is not well-formed for association with a path. On a conceptual level, this is not surprising. After all, a path is a representation of movement/development over the course of an event. If during an event, no theme can be shown undergo change or development, then what is the relevance of the path to the event?

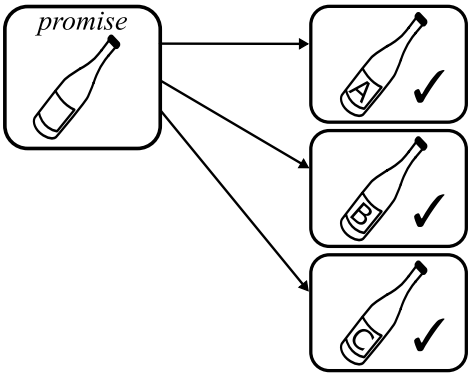
And THEME is, of course, a function from events to individuals. As a function, THEME(e) must, for any arbitrary e, either map e to a unique individual or be undefined. (I.e., it is not possible for THEME(e) to map an event to multiple distinct individuals.) This creates the possibility of cascading undefinedness: undefinedness of THEME(e) feeds undefinedness of TRAVERSE(e), which feeds undefinedness of the SPATH(e) and LPATH(e) functions, which in turn feeds undefinedness of REVERSE. And if REVERSE is undefined, the presupposition of restitutive and returnative *again/back* must be undefined as well.

When intensional ToP verbs combine with nonspecific objects, I argue that we see exactly this undefinedness. Because the promise need not be satisfied by a particular unique individual, there is no unique individual for THEME to identify. To illustrate, let us first ask exactly what is meant to be promised in an infelicitous example like (9), which I repeat here. The intended meaning is parallel to the nonspecific reading of the well-formed example (31). As represented in (32) below, the nonspecific promise does not pertain to any particular bottle; it will be considered fulfilled in any possible world where Emma transfers to Frank some bottle of wine.

(9) #Emma promised Frank a bottle of wine again.

(31) Emma promised Frank a bottle of wine.

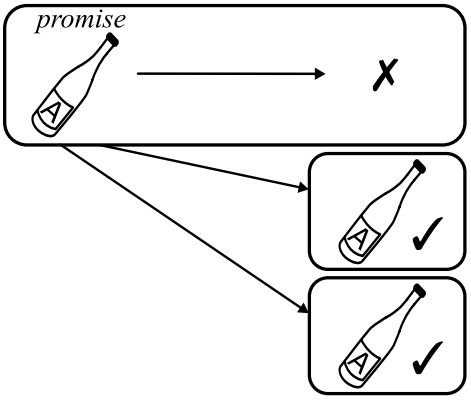
(32)



In order to associate a path with the event described by (9), we must first determine what the theme of that event is. This is a problem. How, when the promise can involve the transfer of different individuals across different possible worlds, do we determine what the theme of this event is? THEME cannot merely identify the individual that is transferred in the actual world, because there is not necessarily such an individual. Consider the specific promise in (33), which as represented in (34) must be satisfied by a particular individual. In this case, the returnative reading of *again* felicitously combines with an event of promising, even though the actual world is not one in which the promise is fulfilled.

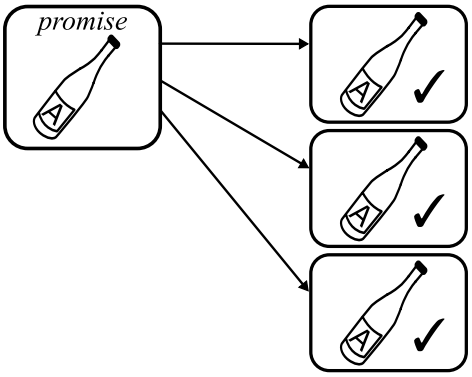
(33) Emma promised Frank the bottle again. (But she broke her promise and kept it.)

(34)



So in both (32) and in (34), we cannot rely on the actual world alone—instead we must appeal to all worlds in the modal domain associated with the promise. For specific promises, every world where the promise is satisfied involves the transfer of the same theme, as represented in (35). When considering specific promises, then, there *does* exist a theme: that unique individual transfered in all possible worlds wherein the promise is satisfied (i.e., all worlds in $f_{\text{norm}}(e)$).

(35)



For nonspecific promises, though, the possible worlds in which the promise is satisfied vary in the identify of the transferred individual. THEME cannot map a *promise* event to multiple individuals, so it must therefore be undefined. This feeds a chain of undefinedness that results in the pattern of infelicity that I refer to as the Intensional Restitution Effect.

5. Conclusion

In this paper, I've described a novel effect, which I refer to as the Intensional Restitution Effect, under which the so-called 'restitutive' reading of *again/back* is infelicitous in combination with nonspecific objects of intensional transfer-of-possession verbs. I've argued that this effect can receive a natural explanation under the 're'-domain framework of Zwarts (2019), a lexical analysis of the *again* ambiguity that describes the presupposition of the restitutive reading (and other related readings) with reference to semantic paths. This predicts a key role for the theme of the modified event in the evaluation of the presupposition of *again*. When the object is nonspecific there is no unique theme, and the presupposition of *again* fails, leading to the observed pattern of infelicity.

5.1. A uniqueness requirement, or an identity requirement?

Throughout this paper, I have argued that the Intensional Restitution Effect results from what is effectively the violation of a 'uniqueness requirement'. That is, infelicity results in cases where THEME(e) does not identify a unique individual. However, it may be possible to offer an alternative characterization of the Intensional Restitution Effect as stemming from an 'identity requirement'—that is, infelicity results when the asserted theme (THEME(e)) and the presupposed theme (THEME(e')) do not identify the same individual.[20] Although Zwarts does not implement such a requirement, he allows that it may be desirable.[21] The main drawbacks are possible counterexamples like (36), where a part-whole relationship appears sufficient; (37), where the apparent theme *souvenir* does not participate in the presupposed event, and (38), where the two themes appear to have no direct relationship at all.

[20]Thank you to two audience members for independently raising this question.

[21]He says of his proposed returnative denotation: "This will clearly overgenerate, by allowing far too many cases of non-identity of participants between the asserted and presupposed event description" (Zwarts, 2019: p. 223).

(36) The neighbor boy borrowed my daughter's toy lawnmower. He broke it, then he gave her the handle again/back.

(37) I recently visited Copenhagen. I brought a souvenir back home.

(38) Ada threw a plate to Bob. Bob kicked a pillow back.[22]

It may be that these examples can be explained away. Note that in (37), it may in fact be the subject that is construed as the theme. Note also that (37–38) are only felicitous in combination with *back*, not with *again*. This may indicate that, although (37–38) resemble returnative readings, they in fact instantiate another reading of *back*—one that is not shared with *again*. Furthermore, the 'identity requirement' may account for certain puzzling examples in which the 'uniqueness requirement' appears to be relaxed. Consider example (40) below.

(39) On a crime drama, the police arrested a hacker, confiscating five laptop computers he used for criminal activity. To entice him to cooperate with their investigation, they offered to return one of the confiscated computers (selected at random).

(40) The police offered the hacker a computer again/back.

In the context of (39), the offer in (40) cannot be understood as an offer of any arbitrary computer. Nor can it be understood as an offer of a unique computer, since any of the five computers in context might fulfill it. It seems possible to characterize this behavior in terms of an 'identity requirement', so long as it is not *strict* identity. If identity of some part of $\textsc{theme}(e)$ with some part of $\textsc{theme}(e')$ is sufficient, then the felicity of (40) could be captured. This approach is certainly promising, although it would require (i) a significant revision to the semantics of (Zwarts, 2019), and (ii) an alternative explanation for (36–38). These are topics for future inquiry.

5.2. Alternative analyses of *again/back*

In the present analysis of the Intensional Restitution Effect, the key advantage of Zwarts's (2019) framework is the built-in sensitivity to the specificity of the object DP. In fact, an alternative view might be to consider the Intensional Restitution Effect a *prediction* of this framework. The path-based returnative and restitutive presuppositions cannot be evaluated unless a unique theme can be determined, so in any contexts where there is no unique theme, we expect presupposition failure. If this 'prediction' were not borne out—that is, if the Intensional Restitution Effect did not exist—it would pose a challenge to the arguments of Zwarts (2019).

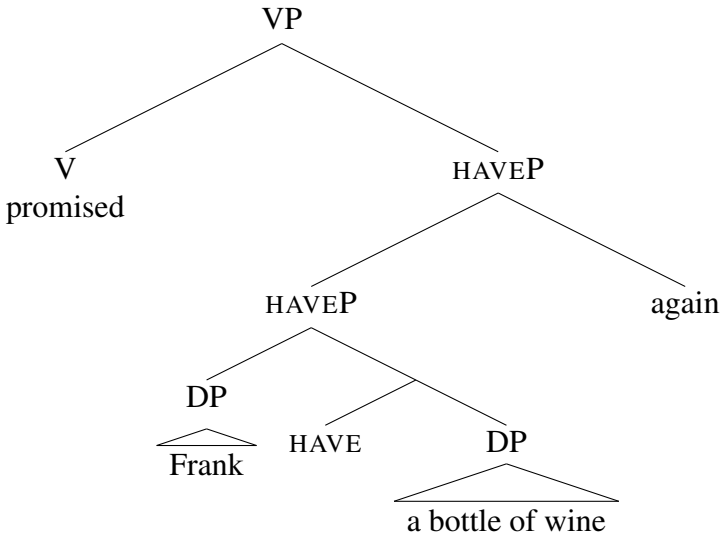
This is not the only possibility, of course. Other analyses might be adapted to account for the Intensional Restitution Effect, though at best they require modification, and at worst they face significant challenges. These alternatives can be divided into two types, "lexical" analyses on the one hand, and "structural" analyses on the other. Lexical analyses are those that posit distinct lexical entries to represent the multiple interpretations of *again* (see e.g. Fabricius-Hansen, 2001; Pedersen, 2015). I will not review their respective benefits/drawbacks in detail.

[22]This is a direct translation of example (21c) from Zwarts (2019: p. 223): *Ada gooide een bord naar Bob. Bob schopte een kussen terug.*

Structural analyses are those that derive restitutive and repetitive interpretations from a scope ambiguity involving a single lexical item (see e.g. von Stechow, 1995, 1996; Beck and Johnson, 2004). These represent restitutive readings as in (42), where *again* modifies a small clause complement of the verb (represented here as HAVEP, following Beck and Johnson 2004). With specific promises, this analysis appears quite plausible; in nonspecific cases, however, this structure does not appear to lead to the observed infelicity.

(41) $[\![\text{again}]\!] = \lambda E \lambda e : \exists e'[e' < e \wedge E(e')].[E(e)]$

(42)



To explain the Intensional Restitution Effect, there are two challenges that a structural analysis of the *again* ambiguity faces. First, how is it that *again* comes to be sensitive to the specificity of the object *only* in the restitutive case, and not in the repetitive case as well? The relatively standard denotation given in (41) takes a property of events as its argument, and should not be sensitive to the arguments that help to give rise to that property. Second, we cannot simply assume that the Intensional Restitution Effect is caused by the absence of the small clause, since the lower scope position is available with specific promises, as in (43).

(43) Emma promised [[Frank the bottle] again/back] (after she's done with it).

What's more, other clausal diagnostics attest to its presence: temporal modifiers can take scope within the small clause, as in (44), and pronouns may refer to the content of the small clause, as in (45), regardless of whether the object is interpreted as specific or nonspecific.

(44) I promised [[Ron a horse] tomorrow].

(45) Sam offered [her brother a popsicle], but the babysitter wouldn't allow it / *one.

A plausible account of the Intensional Restitution Effect, under this family of analyses, must explain why a denotation for *again* that is not sensitive to specificity and a small clause that appears present across the board cannot felicitously combine. It may be forced to attribute the observed pattern of infelicity either to some property of the attachment site of *again* or to the semantics of the small clause itself. Yet, looking to (42) as an example, it's difficult to see what the source of that infelicity might be.

References

Beck, S. and K. Johnson (2004). Double objects again. *Linguistic Inquiry 35*, 97–123.

Csirmaz, A. (2015). Re Hungarian again. *Acta Linguistica Hungarica 62*(3), 263–295.

Dobler, E. (2008). *Again* and the structure of result states. In S. Blaho, C. Constantinescu, and E. Schoorlemmer (Eds.), *Proceedings of ConSOLE XV*, pp. 41–66.

Fabricius-Hansen, C. (2001, 01). "Wi(e)der" and "Again(st)". In C. Féry and W. Sternefeld (Eds.), *Audiatur Vox Sapientiae. A Festschrift for Arnim von Stechow*, pp. 101–130. Berlin: de Gruyter.

Iyer, J. (2018). The presuppositional objects of restitutive 'again'. Ms.

Kratzer, A. (2013). Creating a family: Constructing transfer of possession verbs. Paper presented at the Little v Workshop in Leiden, October 2013.

Levin, B. (1993). *English verb classes and their alternations: A preliminary investigation*. Chicago, IL: University of Chicago Press.

McCawley, J. D. (1971). Prelexical syntax. In *Report of the 22nd Annual Roundtable on Linguistics and Language Studies*, Washington, DC, pp. 19–33. Georgetown University.

Morgan, J. L. (1969). On arguing about semantics. *Papers in Linguistics 1*(1), 49–70.

Patel-Grosz, P. and S. Beck (2019). Different *again*. *Semantics and Pragmatics 12*(3), 1–52.

Pedersen, W. (2015). A Scalar Analysis of Again-Ambiguities. *Journal of Semantics 32*(3), 373–424.

von Stechow, A. (1995). Lexical decomposition in syntax. In U. Egli, P. E. Pause, C. Schwarze, A. von Stechow, and G. Wienold (Eds.), *The lexicon in the organization of language*, pp. 81–118. Amsterdam: John Benjamins.

von Stechow, A. (1996). The different readings of wieder "again": A structural account. *Journal of Semantics 13*, 87–138.

Zwarts, J. (2019). From 'back' to 'again' in Dutch: The structure of the 're' domain. *Journal of Semantics 36*, 211–240.