# A Scopal Theory of Presupposition I

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## 1. TRIGGERS AND INHERITANCE

A presupposition, for the purposes of this paper, is a kind of entailment: a statement, or proposition, *p*, presupposes a proposition *r*, only if *p* entails *r*, that is, intuitively, only if the truth of *p* guarantees the truth of *r*.[1] In the central cases, the entailment is produced by the presence of a specific word or phrase, known as the presupposition *trigger*. The triggers that we will discuss are those in the following examples:

(1) a. The king of France is bald. (Presupposes that France has a king.)
   b. {It was Mary/Mary was the one} who left early. (Presupposes that someone left early.)
   c. John also attended. (Presupposes that someone other than John attended.[2])
   d. Everyone will go to Venice again. (Presupposes that each has been or will have been to Venice on an earlier occasion.)
   e. It has {started/stopped} raining. (Presupposes that it {wasn't/was} raining just before the announcement.)
   f. William managed to hit the target. (Presupposes, in non-ironic use, that hitting the target is difficult.)

These cases may be contrasted with ones in which there are entailments, but the entailed

1. So our topic is *logical* presupposition, in the taxonomy of (Soames 1989).
2. Or that John did something else relevant besides attending. I will ignore this reading in what follows.

propositions are not presupposed, as in:

(2) Tom will be gone all week. (Entails but does not presuppose that Tom will be gone for seven days, that someone will be gone all week, and so on.)

So how are we to characterize the difference between the apparently unitary phenomenon manifested by the examples in (1), and the 'regular' entailment of (2)? One possibility is that the difference is pragmatic, having to do with what's required for *appropriate* use of the various sentences. In particular, the examples in (1) are only used appropriately if the presupposed proposition is already being taken for granted by the parties to the conversation. Whereas there is no requirement that parties to a conversation in which (2) is uttered must *already* be taking for granted that Tom will be gone for seven days or that someone will be gone all week. However, this is also true of the examples in (1). For example, one might respond as follows to a query about the current weather from someone who doesn't know what it is: *the rain has stopped*. The entailment, that it was recently raining, is a piece of new information that can be gleaned from the statement that the rain has stopped, in the same way as the new information that Tom will be gone for seven days can be gleaned from (2).[3]

An alternative approach to distinguishing the entailments in (1) from the ones in (2) is in terms of the survival of the entailment under negation. The natural negation of (2) is

(3) Tom won't be gone all week

and this certainly does not entail that Tom will be gone for seven days, that someone will be gone all week, and so on. By contrast, the natural negations of the examples in (1) (the forms of words by which the statements in (1) would normally be denied) do seem to have

3. In the case of the presupposition, the consequence that it was recently raining is said to be *accommodated*, whereas, in the case of the regular entailment, the consequence that someone will be gone all week is merely *accepted*. The distinction between these two seems to me to be too slight to anchor the difference between the examples in (1) and (2).

the same presuppositions as their positive counterparts:

(4) a. The king of France isn't bald. (Still presupposes that France has a king.)
   b. {It wasn't Mary/Mary wasn't the one} who left early. (Still presupposes that someone left early.)
   c. John didn't also attend. (Still presupposes that someone other than John attended.)
   d. Not everyone will go to Venice again. (Still presupposes that everyone has been or will have been to Venice on an earlier occasion.)
   e. It hasn't {started/stopped} raining. (Still presupposes that it {wasn't/was} raining just before the announcement.)
   f. William didn't manage to hit the target. (Still presupposes, in non-ironic use, that hitting the target is difficult.)

Unlike the examples in (1), each of the presupposition claims in (4) could be contested. But a more modest claim about (4) is, to my ear, correct, that the *unmarked* or *default* reading of the natural negation has the same presupposition as the positive counterpart.[4]

Does this mean that we have in (1) and (4) a collection of counterexamples to *modus tollens*, either across the entailments, or across conditionals such as *if it was Mary who left early then someone left early*? For if any of the presuppositions listed under (1) or (4) is false, for example, if no-one left early, then we should be able to assert the negation of the corresponding statement in (1), which should just be the statement in (4), for instance, that it wasn't Mary who left early. Yet none of the statements in (4) seems true, at least on its default readings, if what we are identifying as its presupposition is false. So perhaps, after all, we do have counterexamples to *modus tollens*. However, this conclusion does not follow if the statements in (4) are not the negations delivered by the *modus tollens* scheme and that will be one consequence of our analyses, exactly as Russell would have said about (4a).

4. Discuss non-restrictive rc's

## 2. SCOPE, DESCRIPTIONS AND NEGATION

What shows that (1a) together with *France doesn't have a king* does not entail (4a), *the king of France isn't bald*, is that the presupposition that France has a king survives in *the king of France isn't bald*; the same problem arises for inferring *the king of France isn't bald* from *if the king of France is bald then France has a king* and *France doesn't have a king*. Since negative contexts are entailment-cancelling (that $p$ entails $q$ is no reason to expect $\neg p$ to entail $q$), a tempting explanation of the survival, or *inheritance*, or *projection*, of the presupposition, is that the default reading of the natural negation puts the definite article outside the scope of the negation element. In the case of the (a)-examples, this is even how things look. Symbolically, we have

(5) a. **(the(king_of_france))(bald)**
    b. **(the(king_of_france))(λx.not(bald(x)))**.[5]

as the meanings of (1a) and (4a) respectively.[6] A correct *modus tollens* inference could only produce 'it is not the case that the king of France is bald', with meaning

(6) **not[(the(king_of_france))(bald))]**.

Far from being the default meaning of (4a), (6) may not even be a possible meaning. But if it *is* possible, it is plausible that (6) gets its non-default status from pragmatic considerations. For if what's at issue is whether or not France's king is bald, the proposition (6) meets the Gricean maxim of informativeness only for a speaker who isn't sure whether or not France has a king, but is sure that *if* France has a king then that king isn't bald. The other negative

5. I use underscoring in terms to indicate suppression of the details of a full analysis.

6. **bald** and **λx.not(bald(x))** are functions of type *ib*, i.e., functions from *i*ndividuals to truth-values ('*b*oolean'). In this notation, *e* is reserved for the type of events. I am treating **the** as being a function that takes an input of type *ib* – in this case **(of(france))(king)** – and produces a function from functions of type *ib*, such as **bald**, to truth-values. That is, **the** has the same type as determiners such as **no** and **every**, namely, (*ib*)((*ib*)*b*).

views on the matter are (i) that France has no king, and (ii) that it does, and that king isn't bald. (6), though a consequence of both (i) and (ii), is too weak to communicate either adequately. So (6) is appropriate only in the rather unusual case of a speaker with non-truth-functional grounds for *if France has a king then that king isn't bald* (say, a conviction that the French would never allow a bald man to ascend the throne), and this conditional itself, again on Gricean grounds, is a better way of expressing the proposition than (4a).

The model suggested by the (a)-examples, then, is that natural negations have a default interpretation in which the presupposition-trigger is not within the semantic scope of the negation operator; and consequently, natural negations on their default readings are not the conclusions of *modus tollens* inferences, since in the latter *everything* is in the scope of the negation. If other meanings are derivable for a natural negation, there will be reasons which explain why they are less preferred. And with the presupposition-trigger in the default reading unaffected by the implication-canceller (*the* is outside the scope of *not*), it is unsurprising that the presupposition is inherited by the natural negation of the positive sentence. At least, this scopal account seems quite reasonable for (1a) and (4a).

Why exactly does *the* trigger existence and uniqueness presuppositions? Names, singular demonstratives and singular definite descriptions may all be said to belong to the class of *identifying* expressions (or expressions that *purport* to identify): names identify by, well, naming, demonstratives identify by being associated with a demonstration, and descriptions identify by describing. For any expressions of these sorts to succeed in identifying, the way they identify must issue in exactly one object, and the conventional meaning of *the* simply encodes this requirement for identification by description. When the requirement isn't met, it is plausible that no truth-value can be ascribed to the whole statement (in the cases of names and demonstratives, where there is no descriptive material, perhaps no *meaning* can be derived for the statement). But one exception would occur if the failed expression is within the scope of an operator *O*(…) which allows failure of unique identification to be a way of making *O*(…) true. Arguably, wide-scope negation, 'it is not the case that…', is such an operator.[7]

The scope account is also applicable to more complex cases, in which the definite description contains an anaphor, as in

(7) a. Every royalist venerates his country's king.

b. **(every(royalist))λx.(the(king_of_x's_country))λy.venerates(y)(x)**.

c. Every royalist's country has a king.

(7a) presupposes (7c) (ignoring the demonstrative reading of *his*). The description *his country's king* is not of course an identifying expression as it stands, but only relative to a resolution of the possessive *his*. *His country's king* succeeds in identifying on assigning any royalist to *his* iff every royalist's country has one and only one king, and so the latter is presupposed.

It is clear that *every royalist doesn't venerate his country's king*, in the sense that every royalist fails to venerate his country's king, can receive an analysis analogous to (5b) – simply replace the final lambda term of (7b) with **λy.not(venerates(y)(x))**. But a bigger challenge is presented by

(8) Not every royalist venerates his country's king.

(8) also presupposes that every royalist's country has a king, and it has *his country's king* as a constituent. Because of its anaphoric *his*, this description must be within the scope of *every royalist*. But then the description cannot have *not* within its scope, since that would change the meaning: *not every royalist is…* is weaker than *every royalist is not…* So we depart from

7. *It is not the case* is a logician's form of words made from a verb phrase *is the case* (synonymous with *is true*) and verb-phrase negation, prefixed with an expletive *it*. And *it isn't true that p* is true if *p* isn't true; which it isn't if it is truth-valueless.

our previous paradigm, where having *not* within the scope of the description was the key to explanation of presupposition-inheritance in negative sentences.

The solution to the problem, or course, is that we don't require that the negation should *be* within the scope of the description, but only that the description *shouldn't* be within the scope of the negation. So if neither is within the scope of the other, presupposition-inheritance would still be expected. This is what we find in (8), where *not* combines with *every* to produce a negative determiner, *not every*. Thus we get the analysis

(9) **((not(every))(royalist))λx.(the(king_of_x's_country))λy.venerates(y)(x)**.

For (9) to have a truth-value, each royalist, when assigned to **x**, should make **the(king_of_x's_country)** an identifying expression, so that the main lambda term in (9) determines a property of individuals as the input to **(not(every))(royalist)**. So (9) presupposes that for each royalist the description is identifying, i.e., that each royalist's country has one and only one king.

The scope account of presupposition-triggering for definite descriptions in positive and negative sentences appears to have some promise. So we are prompted to ask whether it can be generalized to the other triggers in (1). On the face of it, this looks unpromising, for example, in the case of *again*. *John won't go again* presupposes that John has been before, but if we move *again* in front of *not*, we get something like *John again won't go*, which does not presuppose that he's been before, but rather that he has failed to go before (and says that he is about to fail again). Nevertheless, I will argue that the scope account *can* be generalized. Even more sweepingly, I will argue that all presupposition-triggering reduces to the case of *the*.

## 3. EXTENDING THE ACCOUNT: THE CLEFT CONSTRUCTION

One crucial component of the extension of the scopal account I will rely on where needed is an event semantics for the language. I will not try to justify this in advance – by its fruits you shall know it. In the neo-Davidsonian version of event semantics developed in (Parsons 1990) from (Davidson 1967), the non-presuppositional *Mary left early* is construed as asserting the occurrence of an event which is a leaving, whose *agent* is Mary, and which was early. Without special intonation, the natural negation *Mary didn't leave early* simply says that no such event occurred. But if we stress *Mary* (*MARY didn't leave early*) we seem to imply someone else left early; if we stress *leave* we seem to imply that Mary did something else early, say, arrive; and if we stress *early* we seem to imply that Mary left at the expected time or later. The cleft construction exhibited in (1b) provides a way of conventionally encapsulating the effect of these various stresses (in addition to (1b) we also have the likes of *it wasn't leaving that Mary did early*). The semantic correlate, for (1b) in particular, is an interpretation which ascribes agency in a special way:

(10) a. It was Mary who left early.

b. **((some)λe.e_is_an_early_leaving)[λe′.(the_agent_of_e′)λx.(x = mary)].**[8]

(10b) may be read 'for some early leaving, its agent was Mary'. The overall structure is that of a restricted event quantifier whose scope asserts agency of Mary. However, there is a difficulty with this event quantifier, for its presence seems to make (10b) *assert* that someone left early, while it is a fundamental intuition about triggered presuppositions that they are not asserted, *contra* Russell's analysis of definite descriptions.[9] But we can accommo-

8. In this analysis, **some** is of type $(eb)((eb)b)$. That is, it takes a property of events, in this case that of being an early leaving, and produces a quantifier, *some early leaving*, which takes a property of events, in this case that of having Mary as agent, and produces a truth-value. In general, I will not clutter formulae with type-identifiers, since they are easy to determine given the assumption of well-typedness. And I will sometimes suppress parentheses, given the same assumption. For example, **agent(e′)(mary)** can only be read as **(agent(e′))(mary)**, not as **agent((e′)(mary))**, since the latter involves the ill-typed **(e′)(mary)**, an attempt to apply an event (a non-function) to an individual. And for **(agent(e′))(mary)** to be well-typed, **agent** must have the type $e(ib)$, taking an event as input, and producing a property of individuals (*being agent of that event*) as output.

9. That definite descriptions *assert* existence isn't an inevitable consequence of Russell's approach. Russell wanted to show that a single-level semantics (meaning = reference) was viable, and conceding the meaningfulness of empty definite descriptions, did not wish to provide pseudo-entities for such descriptions to refer to. So he had to analyze a definite description as some kind of non-referring term. The particular quantifier analysis

date this. If (10b) involved a unary quantifier **some** applied to a conjunction of event properties, then the occurrence of a leaving would be asserted, and (10b) correspondingly would be in some doubt. However, (10b) in fact involves a binary quantifier, consisting in a determiner and a predicate expressing a restriction of (the range of) the determiner. In a simpler illustration, the difference is between *something is a barking dog*, which is $\mathbf{(some^1)\lambda x.bark(x)\ and\ dog(x)}$, and *some dog barks*, which is $\mathbf{(some^2(dog))(bark)}$. *Some dog barks* does not assert the existence of dogs, but only presupposes it (takes it for granted) in order to assert barking of one of them. In the same way, (10b) presupposes that there was an early leaving, rather than asserts it.[10] This claim is specific to the determiner $\mathbf{some^2}$, not part of a general view about quantified noun phrases (QNP's).[11] Perhaps *no snark barks* and *every snark barks* also in some sense presuppose that there are snarks, but *some snark barks* clearly entails it, whereas the others may merely implicate it *via* a pragmatic mechanism.[12] In sum, then, if restricted existentials are existence-presupposing, (10b) may be acceptable

This overall structure of (10b), $\mathbf{((some)\lambda e.\phi)[\lambda e'.\psi]}$, makes it clear that two interpretations of (4b), the natural negation of (10a), are *prima facie* available, corresponding to the wide-scope negation $\mathbf{not(((some)\lambda e.\phi)[\lambda e'.\psi])}$ and the internal negation $\mathbf{((some)\lambda e.\phi)[\lambda e'.not(\psi)]}$. But in this case it seems wrong to admit both as possibilities and appeal to pragmatic factors to eliminate the external negation reading: the grammaticization effected by the cleft construction conventionally requires the internal reading. So as a first attempt we have

he gave is decompositional, but he could just as easily have taken **the** as a primitive, which combines with a predicate to form a restricted presuppositional quantifier. Restricted quantifiers aren't referring terms, so this gives Russell what he wants. And if *the* doesn't assert existence, neither does **the**.

10. note to Herberger. Also discuss "hey wait a minute" test.

11. Footnote to Heim and Kratzer

12. On the face of it, one way for it to be true that no snark barks is for there to be no snarks. In the same way, in a logic class we explain the non-existence of an interpretation verifying $p$ and $\neg p$ and falsifying $q$ in terms of the non-existence of an interpretation verifying $p$ and $\neg p$; hence, for any $p$, $q$, we have $p, \neg p \vDash q$.

(11) a. It wasn't Mary who left early.

b. **((some)λe.e_is_an_early_leaving)[λe′.(the_agent_of_e′)λx.not(x = mary)].**

with presuppositional *some early leaving*. Since leavings must have agents, (11b) entails that someone left early, the proposition identified in (4b) as the presupposition.

But there is a decisive objection to (11b). For if John left early, (11b) is true, even if Mary left early shortly afterwards, making (11a) untrue. And trying to repair this by giving **not** wide scope in (11b) won't work, since that produces something like *no early leaving is such that the agent of that leaving was Mary*, which doesn't, or doesn't clearly, presuppose that someone left early, as opposed to pragmatically conveying it, as suggested three paragraphs back. *No early leaving is such that the agent of that leaving was Mary* only clearly presupposes that every early leaving had a unique agent.

It is not difficult to see that the problem is solved if **some** is replaced with **the** in (11b). We have a choice between singular and plural, that is, between

(12) a. **((the)λe.e_is_an_early_leaving)[λe′.(the_agent_of_e′)λx.not(x = mary)].**

b. **(the_early_leavings)[(the_agent_of_any_of_them)λx.not(x = mary)].**

In this case I am inclined to favor the singular as the correct account, that is, I think that (11a) would be inappropriate if many people left early in multiple leavings; one ought to say in that case that Mary wasn't one of those who left early (this is certainly correct if (11a) is synonymous with *Mary wasn't the one who left early*). But whichever analysis in (12) we choose, we find that the presupposition *someone left early* is generated by a definite description. In some sense, then, this case reduces to the previous one, where the descriptions were explicit. This unification is only obtained if we also change the analysis of (10a), but that would have to be done anyway, since it's difficult to believe that the introduction of negation into (10a) would turn **some** into **the**. So we arrive at

(13) a. It was Mary who left early.

b. **((the)λe.leave(e) and early(e))[λe′.(the_agent_of_e′)λx.(x = mary)]**.

In deriving interpretations in event semantics, the derivations typically lead to analyses with free event variables, and a step of 'finalization' is needed to complete them, in which the event variable is bound (Francez and Steedman 2006:399). By default (Parsons 1995:650–51), it is bound by an existential, but if our discussion of the presuppositions of the cleft construction is right, this is one case where the default should be displaced. This has the pleasing consequence that we get a more securely presuppositional determiner into the analyses.

## 4. Extending the account: *also* and *again*

Can a scopal account explain presuppositions triggered by *also* and *again*? *Also* is polymorphic, as the ambiguity of (1c), *John also attended*, indicates. We are focussing on the reading where *John* is the argument to *also*, not the reading where *attended* is the argument, which presupposes that John did something else relevant (*he not only registered, but also attended*). The particle **also** defined for the type of individuals is governed by a meaning-postulate which, given presuppositional **some²**, might, as a first try, be stated:

(14) $\mathbf{also(\alpha).\lambda v.\phi} = \mathbf{(some^2(\lambda v.\phi))\lambda u.\alpha \neq u\ and\ \lambda v.\phi(\alpha)}$[13]

whose right-hand-side says *for some* $\phi$, *it isn't* $\alpha$ *and* $\alpha$ *is* $\phi$. The analysis of *John also attended* and the result of applying (14) to it are then:

(15) a. **also(john)λx.attend(x)**

b. $\mathbf{(some^2(\lambda y.attend(y))(\lambda z.z \neq john\ and\ attend(john))}$.

13. As a generalized quantifier, *also John* $\phi$ means that $\{x: \phi(x)\} \in \{X\text{: John is also in } X\}$. The right-hand-side of (14) would also be acceptable if *also* is taken to be a sentential operator, with *John also attended* to be disambiguated by focus markers. But I think the significance of the focus markers would be naturally explained in terms of polymorphic **also**.

(15b) equates *John also attended* with *for some attender, John is not that person and John attended*, in which *for some attender* presupposes but does not assert that someone attended.

The meaning of (4c), *John didn't also attend*, is not obvious, but it is to be distinguished from *John also didn't attend*, which says that John was also absent (replace **λx.attend(x)** with **λx.not(attend(x))** in (15a)). Instead, we want the reading which says that John was not another attender. There is not much difference in asserted content, but *John was also absent* presupposes that someone else was absent, while *John was not another attender* presupposes that someone else was present. The reading of (4c) we want is the one for the second conjunct in *Mary attended but John didn't also attend*, though in this example there is no overall presupposition that there were attenders besides John.

In the semantics, as before, we want *John* rather than *attend* to be the argument of *also* (making *attend* the argument is appropriate for *John registered but didn't also attend*). *Not* appears to form a constituent with *also* or *also John*, so we might expect to find **(not(also))(john)** or **not(also(john))** in the analysis. But this would make (14) inapplicable. Introducing a separate meaning-postulate for **not(also(α))** or **(not (also))(α)** would violate compositionality, so we must instead see the negation in *John didn't also attend* as applying to something to which (14) can be applied. This leads to:

(16) a. **not[also(john)λx.attend(x)]**

b. **not[some$^2$(λy.attend(y))(λz.z ≠ j and attend(j))]**

But of course the wide-scope negation threatens to cancel the presupposition that at least one other attended. So we have chosen the wrong meaning-postulate. Fortunately, we can fix the problem and at the same time unify with the previous case by using **the**. This time we use plural definite descriptions:

(17) $\mathbf{also}(\alpha).\lambda v.\phi = (\mathbf{the}^2(\mathbf{plu}(\phi)))\lambda V.V(\alpha)$.

This leads to

(18) $(\mathbf{the\ plu(attender)})\lambda X.\mathbf{not[John\_is\_one\_of\_them]}$

for *John didn't also attend* (an attender is the agent of an event of attending). More complicated examples with quantifying into the description are also accommodated by (17), for instance *some bride didn't also attend her wedding:*

(19) $(\mathbf{some(bride)})\lambda x.(\mathbf{the(plu(attender\_of\_the\_wedding\_of\_x))})\lambda X.\mathbf{not}(X(x))$.

There is, admittedly, a problem with the plural: maybe only one other person attended, arguably violating an 'at least two' presupposition of *the attenders*. Perhaps we should use *attender or attenders*, or employ a special number-neutral (like gender-neutral) plural, which permits singleton values of the second-order variables.

I believe the same overall approach is effective for *again*. Our examples are (1d), *everyone will go to Venice again*, and (4d), *not everyone will go to Venice again*, where it is presupposed in both that by the future time envisaged by *will*, all of us will already have been to Venice. I take the meaning of **again** to be given in terms of *repetition*, and as a first attempt at a meaning-postulate we can try

(20) $\mathbf{again}((\mathbf{some}^1).\lambda e.\phi\ \mathbf{and}\ \psi) =$

$$(\mathbf{some}^2(\lambda e''.\phi))\lambda e'.(\mathbf{some}^1).\lambda e.\phi\ \mathbf{and}\ \psi\ \mathbf{and\ repeat}(e')(e).$$

Repetition is a relation between token events, which holds when the later event shares certain characteristics with the earlier one. The reason for the two predicates $\phi$ and $\psi$ is that what will happen again may also have characteristics that are new, and these will be expressed in $\psi$; for example, in *we'll go to Venice again next winter* what is to be repeated may just be going to Venice, not going to Venice next winter. The positioning of *again* can reflect what goes into $\phi$ rather than $\psi$: *we'll go to Venice next winter again* is unhappy, except if you are going more than once in the same winter, by normal means or by time-travel.

For (1d), now (21a), we avoid the reading on which everyone constitutes the collective agent of a single event of travel. So we get (21b) below, applying (20) to which produces (21c):

(21) a. Everyone will go to Venice again.

b. **(everyone)λx.F(again((some$^1$)λe.go(e) and agent(e)(x) and to(venice)(e)))**

c. **(everyone)λx.(some$^2$λe″.go(e″) and agent(e″)(x) and to(venice)(e″)) λe′.F((some$^1$)λe.go(e) and agent(e)(x) and to(venice)(e) and repeat(e′)(e)))**.

d. everyone is such that for some going to Venice by them there will be some going to Venice by them that repeats it.[14]

**F** is a future-tense operator. The acceptability of (21c) again depends on **some$^2$λe″.go(e″) and to(venice)(e″)**, i.e., *for some going to Venice by them*, being a presuppositional quantifier, presupposing that some going to Venice by them occurred.

(4d), now (22) below, can have a corresponding analysis, since the *not* forms a negative quantifier with *everyone*, as in (9):

(22) a. Not everyone will go to Venice again

b. **(not(everyone))λx.F(again((some$^1$)λe.go(e) and agent(e)(x) and to(venice)(e)))**.

But of course the example makes life easy. As noted at the end of section 2, the simpler *John won't go to Venice again* doesn't offer the same opportunity to limit the scope of the negation and express the presupposition. We have

14. The part of the analysis corresponding to the second 'going to Venice by them' could be dropped. If a modifier like *next winter* is present, the last part would assert 'something occurs next winter that repeats it'.

(23) a. **not[F(again)((some¹)λe.go(e) and agent(e)(john) and to(venice)(e))]**.

b. **not[(some²λe″.go(e″) and agent(e″)(john) and to(venice)(e″)) λe′.F(some¹)λe.repeat(e′)(e)]**.

c. **(no²λe″.go(e″) and agent(e″)(john) and to(venice)(e″)) λe′.F(some¹)λe.repeat(e′)(e)**.

(23b) is undesirable because *some going to Venice by John* is within the scope of *not*, and (23c) is correct only if quantifiers of the form *no F* genuinely presuppose the existence of *F*'s. However, the problem is solved by **the** in its plural or numberless guise:

(24) **(the_goings_to_venice_by_john)(not(in the future(some event repeats one of them)))**.

So we are able to find uniform 'atomic' semantics for sentences with presupposition triggers other than *the* which, when analyzed at the 'sub-atomic' level, turn out to express the presuppositions they do because of the presence of *the*.

## 5. OTHER TRIGGERS

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