

An Analysis of *Still*

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1. Introduction

This paper investigates the semantics of the particle *still* in its aspectual, marginality and concessive uses. Typically *still* is used as an aspectual particle: in (1), the particle contributes the meaning that John was already cooking when the utterance was made.

- (1) John is still cooking.

However, not all occurrences of *still* seem to contribute the same meaning. For example, there is a reading of (2) where the implication is that it is earlier than expected.¹

- (2) It is still five o'clock.

The marginality use of *still* is exemplified in (3) (from Michaelis (1993)). The sentence asserts that compact cars are fairly safe and locates them on a scale of safety with respect to other cars. The sentence suggests that compact cars are not particularly safe (even though they are safe), and that safer cars have already been discussed in the context in which (3) is uttered.

- (3) Compact cars are still fairly safe; subcompacts start to get dangerous.

Last, consider the concessive use of *still*, as in conditionals and co-ordinate structures.² The fact that the presence of *even* in (4) is optional, and that we get the same concessive meaning in the coordinate structures in (5) suggests that *still* is responsible for the concessive interpretation.³

- (4) (Even) if the doctor tells him not to, Harry will still run the marathon.

- (5) a. A: John studied all night.
 B: He still failed the test, though.
 b. They helped him, but he still died.

The fact that in (at least some dialects of) English, as well as in other languages, these apparently very different meanings are expressed by a single particle suggests that there is a connection between the occurrences of *still* presented above. Briefly, the theory that I propose in this paper argues the following. Following an established tradition, grading particles can be classified in three classes: *additive* particles like *also*, *scalar* particles like *even*, and *exclusive* particles like *only*. Their contribution to the assertion and the presupposition of the sentence in which they occur is schematized in (6), from Krifka (1998). The expression in brackets on the right represents the presupposition contributed by the particle. F stands for the expression associated with the particle.

- (6) a. $[ADD_1 [\dots F \dots]]: [\dots F \dots]^1 (\exists F' \neq F[\dots F' \dots])$
 b. $[SCAL_1 [\dots F \dots]]: [\dots F \dots] (\neg \exists F' \neq F[\dots F' \dots] \prec_{likely} [\dots F \dots])$
 c. $[EXCL_1 [\dots F \dots]]: \neg \exists F' \neq F[\dots F' \dots] ([\dots F \dots])$

The proposal is that the uses of *still* introduced above can be reduced to these three classes. In particular, I will claim that (i) aspectual *still* is an additive particle, similar to *too* and *also*; (ii) both marginality and concessive *still* are scalar particles; (iii) as for not-yet *still*, I will present the hypothesis that not-yet *still* instantiates the third class above, i.e. it is an exclusive particle, in the same class as *only*. However, I will argue that in order to account for the meaning of exclusive *still* we need to revise the schema above in (6-c): I will argue that the expression $([\dots F \dots])$ on the right hand side of (6-c) (a real implication of the sentence) should be analysed as an implicature and not as a presupposition. This argument has repercussions on the analysis of *only*, which I will briefly mention in section 3.4. What additive, scalar and exclusive *still* have in common is that all of them express the relation *earlier (less) than* (\prec).

One part of the proposal is an attempt to derive the presuppositions triggered by additive (aspectual) *still* and scalar (marginality and concessive) *still* compositionally. In order to capture this fact in a more compositional fashion within a type driven semantics, *still* will be interpreted as a partial function, imposing a partiality condition on the expression in its scope.

In the course of the analysis, I will assume that eventualities may be part of the syntactic representation of a sentence, and I will propose a parallel between the temporal and the nominal domain. As we can talk about new or familiar individuals by employing the distinction between definite and indefinite noun phrases, we can talk about new or familiar eventualities. I will argue that while both the meaning of aspectual *still* and the meaning of *again* make anaphoric reference to eventualities in their presuppositions, they differ in that *still* is used to make an assertion about a discourse-old/familiar eventuality, whereas *again* is used to make an assertion about a new eventuality.

For lack of space I cannot review in detail two important previous analyses of *still*, i.e. Löbner (1989) and Krifka (2000). For a critique of Löbner's proposal, see Krifka (2000). For a brief sketch of the latter proposal, see the beginning of section 2.1.⁴

2. Aspectual *still*

Aspectual *still* is a presupposition trigger. As shown in (7-c), the proposition that John is a UPS employee is true regardless of the truth or falsehood of (7-a).

- (7) a. John is still a UPS employee.
 b. It is not the case that John is still a UPS employee.
 c. *John was a UPS employee.*

When we ask the question of what the presupposition triggered by *still* is there are two possibilities: that it is an existential presupposition or that it is a singular proposition. To answer this question, consider (8) modeled after an example discussed in Heim (1990).⁵ Suppose that (8) is uttered in a context in which it is assumed that John cooks him meals daily.

- (8) When I saw him a couple of days ago, John was cooking. He is still cooking.

The sentence in (8) triggers the inference that John has been cooking continuously for at least two days, even though this inference is pragmatically odd. Suppose the presupposition triggered by *still* were existential (“there is a past time at which John was cooking”). Since the inference in which there is a single cooking stretching over two days is pragmatically odd, and since we are assuming that John cooks his meals every day, we expect that no such inference should accompany (8). The fact that it does suggests that the presupposition must be a singular proposition about a contextually salient cooking. That is to say, what the sentence must presuppose is that the cooking that is occurring now overlapped a past time too. Assuming a view of presuppositions as admittance conditions⁶, the second sentence in (8) will be admitted in the common ground only if, at the time when it is uttered, the common ground entails that the contextually salient cooking was taking place at some past time. Since the first sentence in (8) asserts that a cooking by John was going on at some past time, the second sentence will be admitted in the common ground with the inference that it is about that very cooking by John.⁷

2.1. First steps

We have established in the preceding section that an anaphoric element is present in the presupposition triggered by aspectual *still*. Upon hearing (1), we infer that John’s cooking continued *throughout* an interval that includes a past time and the speech time. In what follows, we will see that this ‘universal’ reading should not be part of the presupposition. If it were, (1) would have to presuppose something along the lines in (9). Following Krifka (2000), I use the symbol \propto to refer to the “abutting” relation.

- (9) a. The contextually salient cooking occurred throughout an interval that includes some past time and abuts now.
 b. $\exists t : \propto(t, t_e) \wedge \forall t' \subseteq t$ [the contextually salient cooking by John occurs at t']

A good environment to test presuppositions is the antecedent of counterfactuals. The presuppositions in the antecedent of a counterfactual conditional must be assumed to be true in the actual world, despite the counterfactuality of the antecedent itself⁸: when the antecedent is known to be false, but the presupposition is known to be true the conditional is felicitous; however, when both the antecedent and its presupposition are known to be false, the conditional is no longer felicitous. Now consider (10). If the antecedent were to presuppose that John is alive throughout an

interval that extends in the past and abuts the speech time, then (10) would only be felicitous in contexts that entail that John is alive throughout an interval that abuts now. Since the context we set up for (10) does not entail such a proposition, the conditional should be infelicitous. But it is not.

- (10) (John died a year ago.) If John were still alive (now), he would be a hundred years old.

Therefore, the ‘universal’ meaning of aspectual *still* cannot be part of the presupposition of the sentence.

The remarks in the previous and current sections also raise some problems for the theory of aspectual particles in Krifka (2000). According to Krifka, aspectual particles only indicate a certain restriction of the set of alternatives to the focus phrase associated with the particle: these alternative must be ordered and different aspectual particles will impose a different ordering. For example, take the sentence *It is still raining*, where the focus is on the whole sentence: according to Krifka, the contribution of the particle is to consider the alternative RAIN and \neg RAIN in that order. Krifka is explicit in saying that the alternative proposition is not required to be true in the actual world.⁹ Now, it does not follow from the contribution of *still* that it was raining at any point in the past, which we observed is part of what the sentence conveys. Krifka suggests that the inference that one of the alternatives is true is an implicature. However, implicatures (differently from presuppositions) do not project in counterfactuals. Therefore, it seems we should be able to utter (10) felicitously in a context where John was never alive.¹⁰

2.2. The proposal for aspectual still

Take our previous example, repeated in (11). Intuitively, the sentence asserts that John is cooking at the speech time, and presupposes that that very eventuality overlapped a past time.¹¹

- (11) John is still cooking.

The task of computing the presupposition of this sentence is not trivial, as we will see below. The most salient feature of the presupposition is that it is generated by using material from the sentence: it is this other material in the sentence that determines which type of eventuality the presupposition is about.¹² The question is whether and how the presupposition of *still* can be compositionally derived. Suppose that the position of the particle affects what material in the sentence will contribute to the presupposition, and that the scope of aspectual *still* is the aspectual phrase (AspP), i.e. all the verbal and aspectual material below Tense (T). In the case of (11), the aspectual head is the imperfective aspect (call it ING). I ignore movement of the subject to [Spec,TP], and I interpret it in its base position, [Spec,VP]. The phrase marked with the subscript *F* is the focused phrase associated with the particle.

- (12) [T]_F still [_{AspP} ING [_{VP} John cook]]

We would like to know, first, how the presupposition is computed, and second, how the presupposition relates to the assertion. In particular, since the eventuality is brought into the sentence as part of the meaning of the predicate, how is a presupposition going to be about it? That is to say, how can we account for the intuition that the sentence asserts that an eventuality of John's cooking overlaps the speech time, and presupposes that *it* overlapped a past time too?

I assume that you can turn predicates of times into predicates of events (Kratzer (1998)). The predicate *to cook* starts off as a predicate of time as in (13-a), and it is then turned into the predicate in (13-c) by means of (13-b).

- (13) a. $\llbracket \text{cook} \rrbracket^{c,g}(\text{John}) = (\lambda x. \lambda t. x \text{ cooks at } t)(\text{John})$
 b. For any P of type $\langle i, t \rangle$, $*P = [\lambda e. P(\text{time}(e)) = 1]$, where $\text{time}(e)$ is the running time of e . (Kratzer (1998))
 c. $\lambda e. \text{the (running) time of } e \text{ is a time when John cooks.}$

After shifting the property of times into a property of eventualities (see (13-b) and (13-c)), we combine the result with ING. However, differently from Kratzer (1998), I do not tie together the aspectual contribution of the -ING operator and \exists -closure into the meaning of the operator.¹³ I assume that when the ING operator combines with the denotation of the VP, the event variable is not \exists -closed. This is shown in (14).

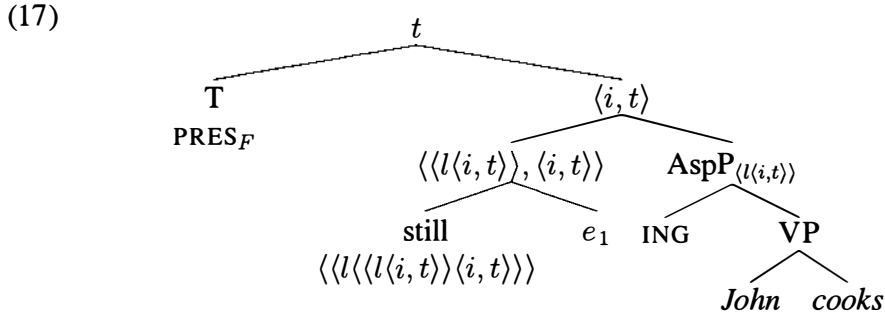
- (14) $\llbracket \text{ing} \rrbracket^{c,g} = \lambda P_{\langle l, t \rangle}. \lambda e. \lambda t. t \subseteq \text{time}(e) \wedge P(e) = 1$
 (15) $[\lambda P_{\langle l, t \rangle}. \lambda e. \lambda t. t \subseteq \text{time}(e) \wedge P(e) = 1] (\lambda e. \text{and time}(e) \text{ is a time when John cooks.})$
 $= \lambda e. \lambda t. t \subseteq \text{time}(e) \wedge \text{time}(e) \text{ is a time when John cooks.}$

Intuitively, the presupposition of *still* is constructed from material within the sentence itself. In our example, the presupposition is that the cooking by John that is going on at the speech time overlapped a past time. The material that is going to be part of the presupposition is the material that occurs in the scope of the particle, in this case AspP. As a way of implementing this idea, I propose that *still* is a partial function introducing a presupposition associated with one of its arguments. The idea that I would like to suggest is that *still* forces both the assertion and the presupposition to be about the same contextually salient eventuality. Let's assume that *still* is a partial function taking two arguments: the first argument is a covert eventuality variable, call it e_1 ; the second argument is the denotation of the AspP (of type $\langle l \langle i, t \rangle \rangle$). The partiality condition is imposed on this second argument. What the particle returns is a function of type $\langle i, t \rangle$. The definition in (16) illustrates how this works.

- (16) $\llbracket \text{still} \rrbracket^{c,g} = \lambda e. \lambda P_{\langle l \langle i, t \rangle \rangle} : \exists t' \in C[t' \prec t \wedge P(e_1)(t') = 1]. P(e_1)$

The variable e_1 is the event argument of P (the denotation of AspP) in both the presupposition and the assertion. C is the contextually salient set of alternatives to

the denotation of the associated focused phrase (here Tense; see the tree below). (17) illustrates the semantic composition in a type-driven semantics.



After merging with tense, we obtain (18).¹⁴ Again, P is the denotation of AspP.

- (18) $(\llbracket \text{still} \rrbracket^{c,g}(e_1)(P))(\llbracket \text{PRES} \rrbracket^{c,g}) = \text{defined only if } \exists t' \prec t_c [P(e_1)(t') = 1];$
 if defined, $(\llbracket \text{still} \rrbracket^{c,g}(e_1)(P))(\llbracket \text{PRES} \rrbracket^{c,g}) = 1$ iff $P(e_1)(t_c) = 1$

Given our definition of P in (15), (18) says that the sentence *John is still cooking* presupposes that the running time of a salient eventuality of John's cooking includes a time before the speech time and asserts of *that* eventuality that its running time includes the speech time. The eventuality variable introduced by *still* in the assertion remains free and not bound by \exists -closure. \exists -closure cannot occur above *still* since the eventuality argument of P has already been saturated by the covert variable e_1 . \exists -closure cannot occur below *still* either, because, if it did, it would bind the eventuality variable in the denotation of AspP and *still* could not combine with it.

To sum up the discussion so far, aspectual *still* takes scope over AspP and associates with the tense in the sentence. Its contribution is twofold: on the one hand, it contributes a presupposition that the running time of an eventuality e_1 includes a time before the reference time (the semantic value of the associated phrase); on the other hand, it makes a contribution to the assertion by providing e_1 as the argument for the eventuality position of its complement AspP. Since \exists -closure can neither occur below the particle nor above for type reasons, e_1 will remain free. Consequently, both the assertion and the presupposition will be about a salient eventuality of John's cooking, which is presupposed to overlap a past time and which is asserted to overlap the speech time. The logical form, truth conditions and presupposition of (11) are as follows.

- (19) $\llbracket [\text{PRES } [\llbracket \text{still } e_1 \rrbracket] [\text{ING John cook}]] \rrbracket^{c,g} = 1$ iff $t_c \subseteq \text{time}(e_1) \wedge \text{time}(e_1)$
 is a time when John cooks; defined only if $\exists t' \in C[t' \prec t_c \wedge t' \subset \text{time}(e_1)$
 and $\text{time}(e_1)$ is a time when John cooks.

It follows correctly that the sentence will be felicitous only if the common ground entails that: (a) there is a salient eventuality of cooking by John and (b) the time of this eventuality includes a past time. It follows that (i) a sentence like *John is still cooking* cannot be felicitous uttered out of the blue and (ii) the sequence in

(8) is understood as talking about a single event stretching over two days, for the second clause requires that John's current cooking be salient in the context and have overlapped a past time.

2.3. *Still and Again*

Suppose you are describing a situation in which a man orders a coffee and a different man pays the check. You cannot describe this situation by using the indefinite *a man*.

(20) A man ordered a coffee. Another man/#A man paid the check.

We are not only required to assert the existence of a man who pays the check, but we must also signal that this man is *different* from the man already salient in the discourse. This explains why (20) without *another* is odd.¹⁵ If the man who ordered the coffee is the same man who paid the check, there are two strategies that we can pursue: either to use the pronoun *he* or to use the definite phrase *the same man*. That is to say, you must either use a noun phrase whose denotation is a salient male individual (the pronoun) or you must assert the existence of a male individual identical to the salient one.

(21) A man ordered a coffee. The same man/he/#a man paid the check.

The same constraints work for reference to eventualities. When asserting the existence of a cooking (by John) in a discourse in which a cooking (by John) is already salient, it must be presupposed that this cooking is either the *same* as or *different* from the past cooking already salient in the context. This expectation is confirmed by the necessity of *again* in (22).

- (22)
- a. Two days ago John was cooking. #He is cooking.
 - b. Two days ago John was cooking. He is cooking again. ('different')
 - c. Two days ago John was cooking. He is still cooking. ('same')

Like *still*, *again* triggers an anaphoric presupposition and it requires that the salient eventuality be *past* to the reference time. If an assertion is made about an eventuality *e* in a context in which an eventuality of the same type is already salient, *e* must be presupposed to be either the same or different from the salient one. In the former case, *still* is required to occur. In the latter, *again* must occur. In the next section, I will spell out in more details how the presupposition triggered by *again* is computed.

2.3.1. *The presupposition of again*

As shown already in Heim (1990), the presupposition of *again* is anaphoric. Suppose somebody who eats pizza rather frequently utters the sentence in (23). We naturally understand Mary's birthday to follow John's birthday. This inference is due to the presence of *again*, since were this particle not there, we could have imag-

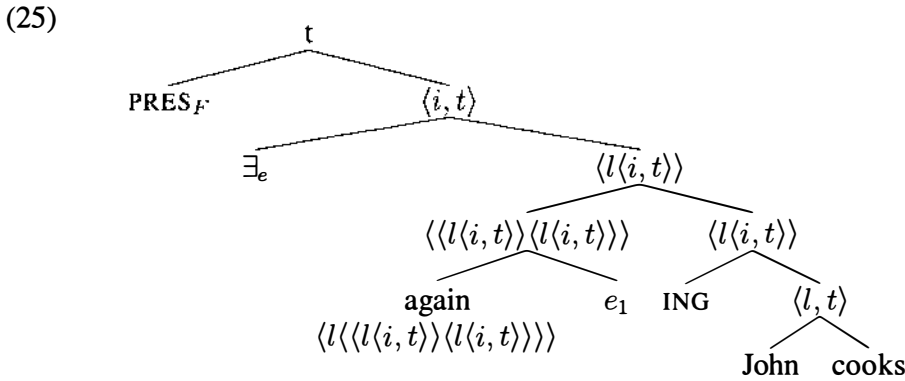
ine the two birthdays in the opposite temporal order.

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

Now, if the presupposition were that there is an occurrence of eating pizza before Mary's birthday, it would be satisfied as we are assuming that the speaker is a regular pizza eater. Therefore, John's birthday would not be necessarily understood as preceding Mary's birthday, and we would not have an explanation for why we make the inference above. Intuitively, the presupposition triggered by *again* must be a particular proposition, i.e. a proposition that a salient pizza eating event that precedes Mary's birthday. This points to the main difference between *still* and *again*: in the case of *still*, both the presupposition and the assertion are about the same eventuality; in the case of *again*, the assertion is about a newly introduced eventuality (of some kind), whereas the presupposition is about a different and already salient eventuality (of the same kind). How can we couch the similarities and differences between these two particles in our analysis? I propose that *again*, like *still*, is a partial function which takes two arguments: a covert eventuality variable e_1 and the denotation of AspP (of type $\langle l\langle i, t \rangle \rangle$). However, differently from *still*, the eventuality variable does not saturate the eventuality argument of P (the denotation of AspP) in the assertion. The definition in (24) shows that, while e_1 becomes an argument of P in the presupposition, *again* returns a function of type $\langle l\langle i, t \rangle \rangle$. The type of *again* is $\langle l\langle l\langle i, t \rangle \rangle \langle l\langle i, t \rangle \rangle \rangle$.

- (24) $\llbracket \text{again} \rrbracket^{c,g} = \lambda e. \lambda P_{\langle l\langle i, t \rangle \rangle} : \exists t' \in C[t' \prec t \wedge P(e_1)(t') = 1]. P_{\langle l\langle i, t \rangle \rangle}$

The tree below shows the steps of the computation: crucially, this time \exists -closure can and will apply above the particle, binding the eventuality position in the assertion. Notice that \exists -closure could not apply below the particle for type reasons (if it did, *again* could not combine with its complement by FA).



The truth conditions for (22-b) are given below. Like *still*, *again* associates with the focused tense phrase, and it requires that there be a time in the focus value of the tense phrase that is earlier than the semantic value of the tense phrase.

- (26) $((\llbracket \text{again} \rrbracket^{c,g}(e_1))(\llbracket \exists_e \text{ ING [John cooks]} \rrbracket^{c,g}))(\llbracket \text{PRES} \rrbracket^{c,g}) = \text{defined only}$

if $\exists t' \in C[t' \prec t_c \wedge t' \subseteq \text{time}(e_1) \wedge \text{time}(e_1)$ is a time when John cooks; if defined $((([\text{again}]^{c,g}(e_1))([\exists_e \text{ ING } [\text{John cooks}]^{c,g}))([\text{PRES}]^{c,g})) = 1$ iff $\exists e_2[t_c \subseteq \text{time}(e_2) \wedge \text{time}(e_2)$ is a time when John cooks.

On the one hand, the presupposition that *again* triggers (the partiality condition on its second argument) is that there is a time before the reference time (the speech time) that is included in the running time of an eventuality e_1 of John's cooking. Since e_1 is free, there must be a salient eventuality in the context that satisfies the presupposition; i.e. the context must entail that a salient eventuality of John's cooking overlapped a past time. On the other hand, the assertion asserts that there is an eventuality of John's cooking whose running time includes the speech time. This explain the anaphoricity of *again*, e.g. the inference in Heim's example (23) that Mary's birthday follows John's birthday. The presupposition requires there to be a salient eventuality of eating pizza preceding the future time of Mary's birthday. In the context in which the second clause is interpreted, there is indeed a salient eventuality of such kind, i.e. the eventuality of eating pizza on John's birthday. Therefore, because of the need to resolve the anaphora in the presupposition, the inference is triggered that John's birthday precedes Mary's.¹⁶

3. Scalar *still*

Let me sum up what we have discussed so far. We started from the classification of grading particles in three groups: additive particles, like *too*; scalar particles like *even*, and finally exclusive particles, like *only*. The purpose of this paper is to show that the uses of *still* that I presented in the introduction can be reduced to the three types of grading particles in the classification above. In the previous sections I argued that aspectual *still* is an additive particle. In the following two subsections, I will argue that marginality and concessive *still* are *scalar* particles.

3.1 Marginality *still*

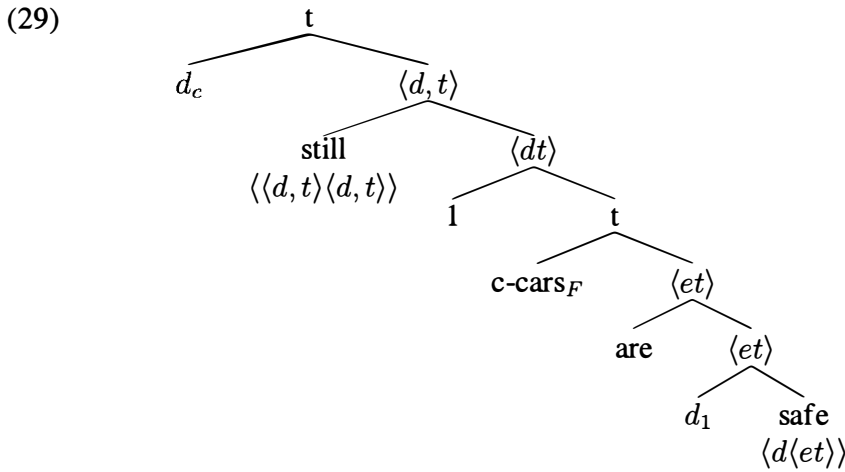
Consider a variation on the marginality example we introduced at the beginning of this paper.

- (27) A: Tell me about sedans, compact and subcompact cars. Are they safe?
 B: Well, sedans are definitely safe. Compact cars are still safe. Subcompacts start to get dangerous.

A plausible candidate for the scale involved in marginality uses of *still* is the scale of degrees introduced by the adjective in the sentence. Following Kennedy and McNally (2002), Kennedy (2003), Heim (2000), among others, I assume that gradable adjectives like *safe* denote relations between individuals and degrees, where degrees are "formalized as points or intervals totally ordered along some dimension" (Kennedy and McNally (2002)). A totally ordered set of degrees is a SCALE. The meaning of the adjective *safe* is given in (28).

(28) $\llbracket \text{safe} \rrbracket = \lambda d. \lambda x. x \text{ is safe to a degree } d$

The value of the degree argument is determined by degree morphology (for example, comparatives, degree modifiers). For sake of simplicity, I will assume that when a gradable adjective is not modified, the degree argument is saturated by a free variable d_c whose value is a contextually provided standard of comparison.¹⁷ In order to illustrate how this meaning is computed, let us go back to our example *Compact cars are still safe* in (27). Let's suppose that *still* associates with the focused phrase *compact cars*. At LF *still* moves from its surface position for type reasons and takes scope over the whole sentence, leaving a variable of type d behind. The focused phrase moves too and lands just above the particle's adjunction site. The variable d_c is the standard of comparison.



The definition of *still* is given here below. The definition of the maximality operator *max* is taken from Heim (2000). What is the value of $x_{\in F}$? $x_{\in F}$ is some member, both salient and different from compact cars, of the focus value of the NP associated with *still* (*compact cars*).

- (30) a. $\llbracket \text{still} \rrbracket = \lambda P_{\langle d, t \rangle} : \max(\lambda d. \text{Adj}(NP_F, d)) \prec \max(\lambda d. \text{Adj}(x_{\in F}, d)). P$
 b. $\max(X) = [\iota d. X(d) = 1 \wedge \forall d' [X(d') = 1 \rightarrow d' \leq d]]$

The truth conditions for the sentence $[\text{Compact cars}]_F \text{ are still safe}$ are as follows.

- (31) $\llbracket [\text{Compact cars}]_F \text{ are still safe} \rrbracket^{c,g} = 1$ iff $\text{safe}(\text{c-cars}, d_c)$; defined only if $\max\{d: \text{safe}(\text{c-cars}, d)\} \prec \max\{d: \text{safe}(x_{\in F}, d)\}$

According to this analysis of the contribution of *still*, we predict that the sentence in question is felicitous only in a context that entails that some salient type of car different from compact cars is safe to a degree greater than the degree to which compacts are safe. In this context, what is at issue is whether compact cars are safe or not, and the contribution of the assertion is to resolve this issue positively. This is a positive result since the sentence in (27) does not seem felicitous out-of-the-blue, but is only acceptable if there is a contextually salient alternative car that is safer to

a higher degree.^{18,19}

3.2. *Concessive still*

Consider the case of concessive *still*. I will take the following two sentences as the paradigmatic examples of this use of the particle.

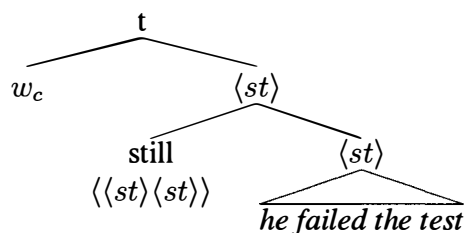
(32) A: [John studied all night]_F.

B: He *still* failed the test, though.

(33) Even if [the doctor tells him not to]_F, Harry will still run the marathon.

It seems fairly innocent to say that (32) asserts that John studied all night and that he failed the test this morning. But what does the sentence presuppose? The implication seems to be that his failing the test after having studied all night is somewhat unexpected. (33) suggests that Harry will run the marathon whether or not the doctor will tell him not to, and, again, that running a marathon despite a doctor's negative advice is not typical behavior. My proposal is that concessive *still* is a scalar particle, where the relevant ordering is the order of worlds according to their likelihood with respect to a certain proposition. Take (32). Worlds where John failed the exam are ordered according to how likely they are given our actual assumptions. Analogously to the case of marginality *still*, the sentence asserts that John studied all night and failed the test in the actual world, and presupposes that the worlds maximally similar to the actual world in which John studies all night and fails the test are *less likely* than the maximally similar worlds where he does not study all night and fails the test. While marginality *still* added a presupposition to a property of degrees, concessive *still* adds a presupposition to a property of worlds (a proposition). The type of the latter *still* is $\langle\langle s, t \rangle \langle s, t \rangle\rangle$. (34) is the structure for B's sentence in (32). The phrase the particle associates with is A's sentence in (32).

(34)



As customary in the literature on modality²⁰, the truth conditions for modal sentences are relative to a notion of comparative similarity, according to which some worlds are more similar to the evaluation world than others. Modal operators quantify over the worlds maximally similar to the evaluation world. As the meaning of concessive *still* shows below, comparison between worlds looks then very similar to comparison between degrees. The definition of the *max* operator is from von Fintel (2001). \prec_{likely} means *less likely*. The proposition *c* is the contextually salient proposition, i.e. the proposition that the particle associates with. The left side of

the \prec_{likely} relation is the intersection of the set of p worlds (p being the proposition denoted by the complement of the particle) and the set of worlds where c is true. The right side of \prec_{likely} is the intersection of the set of p worlds and the set of worlds where $\neg c$ is true. This captures the meaning of (32), as shown in (35-c).

- (35) a. $\llbracket \text{still} \rrbracket^{g,c} = \lambda p_{\langle st \rangle} : \max_{\leq, w_c} \{w : w \in p \wedge w \in c\} \prec_{likely} \max_{\leq, w_c} \{w' : w' \in p \wedge w' \in \neg c\}. p$
 b. For any proposition p , any similarity relation \leq , and any world w :
 $\max_{\leq, w}(p) = \{w' : p(w') = 1 \ \& \ \forall w'' : p(w'') = 1 \rightarrow w' \leq_w w''\}$
 c. $\llbracket \text{John still failed the test} \rrbracket^{g,c} = 1$ iff $w_c \in \{w : \text{John failed the test in } w\}$; defined only if $\max_{\leq, w} \{w : \text{John studied all night in } w \text{ and he failed the test in } w\} \prec_{likely} \max_{\leq, w} \{w' : \text{John didn't studied all night in } w' \text{ and he failed the test in } w'\}$

The case of conditionals like (33) can be treated in a parallel fashion. All the worlds in which Harry runs the marathon are ordered according to how likely they are given our actual assumptions. The sentence asserts that in all the maximally similar worlds in which the doctor will tell Harry not to, Harry will run the marathon, and it presupposes that the maximally similar worlds in which the doctor tells him not to and he runs the marathon are less likely than the maximally similar worlds where the doctor does *not* tell him not to and he runs the marathon. The focused phrase associate with *still* in the conditional case is the antecedent; so, the relevant salient proposition c is the proposition that the doctor tells Harry not to run the marathon.

3.3. “Not-yet” still is an exclusive particle

In this section I will consider what I have called the “not-yet” use of *still*.²¹ The example (36) instantiates this use; the relevant reading is one in which it is not yet some later time (i.e. it is earlier than expected).

- (36) It is still [5 o'clock]_X.

What I will present in this section is a preliminary account of the meaning of not-yet *still*. The idea that I would like to propose here is that not-yet *still* is an exclusive particle, very similar to the meaning of *only*. If we can argue for this claim, then we will have argued that there are three types of *still*, one for each type of grading particle: an additive *still*, a scalar *still* and an exclusive *still*. The proposal is that *still* in (36) associates with the phrase *5 o'clock* and it contributes to the assertion a universal quantifier and a narrow scope negation as shown below.

- (37) $\forall t : 5 \prec t \rightarrow \neg(t = t_c)$

According to (37), (36) asserts that for all times t later than 5, t is not the speech time. This makes not-yet *still* and *only* kins; however, they differ in that the former selects only some of the alternatives to the associated phrase (5), i.e. only those times that are later than 5. Now, (37) is not enough to capture the meaning of (36): just like *only*, the occurrence of *still* in (36) triggers the inference that (38) is true.

- (38) It is (exactly) 5 o'clock.

I would like to suggest that (38) is a conversational implicature arising from the fact that the speaker chose to utter (36) instead of (39).

- (39) It is not 5 o'clock.

Assuming that (37) is the assertive content of (36), (39) asymmetrically entails (36): if it is true that 5 is not now, then it is true that for no time t later than 5, t is now. However, it does not follow from the truth of the proposition that no time later than 5 is now, that now is not 5. Therefore, when the speaker uttered (36), the negation of (39) was conversationally implicated, i.e. that it is 5 o'clock. Since the assertion in (36) is that it is no later than 5 o'clock, we expect (36) to be uttered in a context where what is at issue is whether it is or it is not later than 5 o'clock.²² According to the present analysis, not-yet *still* is an exclusive particle much like *only*, and (38) is an implicature and not a presupposition. This analysis of *still* differs from the presuppositional analysis of *only* (Horn (1969)), according to which (40-a) *presupposes* (40-b).

- (40) a. Only Mary got an A.
b. Mary got an A.

However, that (38) is a conversational implicature and not a presupposition is suggested by the lack of projection in (41).

- (41) a. It is possible that it is still 5 o'clock.
b. Is it still 5 o'clock?

Neither sentence in (41) suggests that it is 5 o'clock at the speech time, which we would expect if the latter were a presupposition. Take (41-a). Since the sentence asserts that it is possible that there is no time later than 5 that is the speech time, the implicature that it is not 5 o'clock now is blocked by the fact that it is consistent with the epistemic state of the speaker that now is not 5 o'clock. For lack of space I cannot go into the details of this discussion (for which I refer the reader to Ippolito (2004)). Now, a presuppositional analysis of *only* seems problematic for precisely the same reasons presented above. Consider the not-yet *only* in (42-a) below. The assertive content must be (42-b). What about the implication in (42-c)?

- (42) a. It is only [5 o'clock]_X
b. $\forall t : 5 \prec t \rightarrow \neg(t = t_c)$
c. It is 5 o'clock.

It is possible to construct an example entirely parallel to (41) where the implication that it is 5 o'clock is absent, thus casting doubt on the claim that (42-c) is a presupposition, and strengthening the hypothesis that it is an implicature.

- (43) It is possible that it is only 5 o'clock.

Clearly, (43) does not strongly suggest that it is 5 o'clock, suggesting that (3) is not a presupposition. A similar point is noted by Geurts and van der Sandt (2004) with respect to non scalar uses of *only* as in (44).

(44) It is possible that only Wilma guessed the secret word.

According to their judgement, (44) does not suggest strongly that Wilma guessed the secret word, contrary to the presuppositional view of *only*. Now consider the negation of (42-a).

(45) It is not the case that it's only 5 o'clock.

The sentence asserts the negation of (42-b), i.e. that there is a time later than 5 that is the speech time. But if the speech time is some time later than 5, then – by the logic of entailment – the speech time is also 5. Therefore, (42-c) is an entailment of (45), even though it was only a conversational implicature of (42-a). The same is true of the negation of (36).

(46) It is not the case that it is still 5 o'clock.

(46) entails that it is now 5 o'clock, in the same way in which *John has three children* entails that John has one child.²³

4. Conclusion

I presented a compositional analysis of the presupposition triggered by *still*. I have argued that the aspectual, not-yet, marginality and concessive uses of *still* fall into the classification of grading particles into the additive, scalar and exclusive classes. In particular, aspectual *still* is an additive particle, marginality and concessive *still* are scalar particles and, finally, non-yet *still* is an exclusive particle. With respect to exclusive *still*, I departed from the presuppositional view of exclusive particles and I suggested that exclusive *still* quantifies over a subset of the set of alternatives to the associate phrase, and that the implication that the predication holds of the associated phrase is not a presupposition but an implicature. In light of the discussion above, we might consider extend the analysis of *only* sketched above to all uses of this exclusive particle.

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Notes

¹Some of the speakers I have asked did not accept this sentence with the intended meaning and could only express the intended reading by using *only* and *just* instead. I will go back to this issue in section 3.4 when I discuss example (2).

²The term *concessive* is from Michaelis (1993).

³Since the concessive readings is there when either *even* or *still* are present (*If the doctor tells him not to, Harry will still run the marathon* or *Even if the doctor tells him not to, Harry will run the marathon*), they seem to be independently responsible for the concessive reading.

⁴Earlier analyses of *still* are König (1977) and Horn (1969). For an analysis of *still* in relation to *already* and to their negative polarity counterparts, *anymore/any longer* and *yet*, see Ippolito (2004).

⁵Heim's discussion is about the presupposition trigger *to stop*.

⁶Stalnaker (1974), Stalnaker (1973), Heim (1982), and others

⁷Heim (1990) refers to Soames (1989) for a similar argument concerning the presupposition of *still*.

⁸See Karttunen and Peters (1979), Heim (1992), Ippolito (2003).

⁹This is important in his proposal in order to avoid Mittwoch's objection to Löbner's analysis of *already*.

¹⁰To stay with the rain example, Krifka's prediction seems to be that we should be able to utter (i) even if it never rained before:

- (i) If it were still raining, the movie theater would be more crowded.

For lack of space, I cannot elaborate more on this and related issues. See Ippolito (2004) for a more detailed discussion of Krifka's proposal.

¹¹I will use the term *eventuality* as a cover term for both events and states. I will discuss later how events come into the semantics of predicates.

¹²As also noted by Kamp (2001), the same is true of other presupposition triggers: *again*, *already*, *too*, *also*. In Kamp (2001) Kamp investigates the problem of the computation of the presupposition of the particle *again* within the framework of DRT. I discuss this particle in section 2.3 in this paper.

¹³The meaning of the imperfective operator ING in Kratzer (1998) is: $[[\text{ing}]^{c,g} = \lambda P_{(t,t)}.\lambda e.\lambda t. \exists e[t \subseteq \text{time}(e) \wedge P(e) = 1]$.

¹⁴For the purposes of this paper, it will suffice to assume the following denotation of the present tense:

- (i) $[[\text{PRES}]^{c,g} = \lambda P.P(t_c)$

Aspectual *still* requires that one of the alternatives in the focus value of the associated phrase (the tense) be a time earlier than the semantic value of that phrase. In our example in the text, since the focused phrase was PRES, the presupposition requires that there be a time before the speech time at which the complement. However, in the following example, since the associated focused phrase is FUT, it is required that one of the alternatives in the focus value of FUT be a time earlier than the semantic value of FUT, i.e. a time before the future time of the assertion.

- (ii) John will start cooking at 7pm tonight. He will still be cooking when tomorrow's game begins.

Therefore, the presupposition triggered by *still* is that the eventuality of John's cooking that will overlap the future time when the game begins also overlapped a time before that future time.

¹⁵The reason why utterances are appropriate only if they linguistically presuppose all that is actually presupposed in the common ground is not well-understood. However, the existence of such a requirement has been already noticed. (i) is from D. Pesetsky who attributes it to I. Heim.

- (i) (Ordering a second coffee from the same waitress:)
a. #I'd like a coffee.

- b. I'd like *another* coffee.

¹⁶As pointed out to me by Bill Ladusaw (p.c.), the asymmetry between *still* and *again* pointed out above, i.e. the fact that, in the case of the former, both the assertion and the presupposition are about the same event, whereas, in the case of the latter, they are about different events, might explain why *again* but not *still* gives rise to the type of ambiguities already discussed in the literature:

- (i) I opened the door again.
(ii) I am still opening the door.

In (i) we can either infer that there was a previous situation in which the door had been opened, or that there was a previous state of the door been open. That is to say, even though the assertion is only about an event of me causing the door to open, there are two types of eventualities than can be presupposed: a eventuality of causing the door to open and an eventuality of the door being open. No such ambiguity is possible with *still*. For detailed discussions and analyses of the ambiguity of *again*, see von Stechow (1996), and Kamp (2001).

¹⁷See von Stechow (1984), Barker (2002), among others for alternatives. See Kennedy and McNally (2002) for a brief overview of the different theories.

¹⁸The following exchange seems to sound strange when *still* is interpreted as a marginality particle (and not as the aspectual *still*):

- (i) A: You know so much about cars. Are compact cars safe?
B: Well, they are still safe.

¹⁹There is one question that at the moment I have no answer to, i.e. what happens when *still* occurs in comparatives. Consider the following interesting fact. Normally in a comparative sentence, neither of the degrees that are compared is required to be as great as the standard of comparison:

- (i) Ann's house is bigger than Mary's, but they're both small.

However, when the comparative occurs with *still* things change:

- (ii) X is a way to solve the problem. A still more efficient way to solve the problem is Y.

The second clause asserts that Y is a more efficient way to solve the problem than X, but it also implicates that X was efficient (that is, as efficient as the relevant standard of efficiency in the context). As of now, this question remains unanswered.

²⁰Lewis (1973), Kratzer (1981), Kratzer (1991), Fintel (2001), among others.

²¹Before I begin the discussion, let me point out that English speakers seem to be split in two categories: those that accept this use of the particle and those who do not. Interestingly for the analysis that I am about to suggest above, the last group uses *only* or a combination of *still* and *only*. Age and place of origin did not seem to be relevant factors to explain the different dialects. I suspect that, when the topic of this paper is looked from a more cross-linguistic perspective (as I plan to do in the future), the not-yet use of *still* and its counterparts in other languages will be found to vary greatly. Here below, I have quoted a couple of attested uses of not-yet *still* from the web:

- (i) Maria: Eat? **It's still 10am!** Michael: So what? I deserve a god lunch! Maria: Lunch is for noon. Michael: Whatever.
(<http://www.geocities.com/prdigitalforce/episode20.html>)
(ii) Got an A! I was jumping for joy (internally, keep in mind **it's still 8am**).
(<http://grahamhensley.info/oldnews.htm>)

²²Krifka (1998) suggests that sentences are answers to implicit questions that are indicated by focus.

²³I believe that this story about the alleged presupposition of *still* can be extended to non scalar uses of *still* as well such as the one in (40-a) in the text. See Ippolito (2004) for more.

References

- BARKER, C. (2002): "The dynamics of vagueness," *Linguistics and Philosophy*, 25, 1–36.
- FINTEL, K. V. (2001): "Counterfactuals in a Dynamic Context," in *Ken Hale. A life in Language*, ed. by M. Kenstowicz, Cambridge, MA. MIT Press.
- GEURTS, B., AND R. VAN DER SANDT (2004): "Interpreting focus," to appear in *Theoretica Linguistics*.
- HEIM, I. (1982): "The Semantics of Definite and Indefinite Noun Phrases," Ph.D. thesis, University of Massachusetts, Amherst, MA.
- (1990): "Presupposition Projection," in *Presupposition, Lexical Meaning and Discourse Processes: Workshop Reader*, ed. by R. van der Sandt.
- (1992): "Presupposition Projection and the Semantics of Attitude Verbs," *Journal of Semantics*, 9, 183–221.
- (2000): "Degree operators and scope," in *Proceedings of SALT X*. Ithaca, NY: CLC Publications.
- HORN, L. (1969): "A presuppositional analysis of 'only' and 'even'," in *Papers from the Fifth Regional Meeting of the Chicago Linguistics Society*, pp. 98–107. CLS.
- IPPOLITO, M. (2003): "On the Semantic Composition of Subjunctive Conditionals," ms.
- (2004): "Still and Already," ms.
- KAMP, H. (2001): "The Importance of Presupposition. Selected papers from the SFB 340," in *Linguistic Form and its Computation*, ed. by C. Rohrer, and A. Ross-deutscher. CSLI.
- KARTTUNEN, L., AND S. PETERS (1979): "Conventional Implicature," in *Syntax and Semantics 11: Presupposition*, ed. by C.-K. Oh, and D. A. Dinneen, pp. 1–56. Academic Press, New York.
- KENNEDY, C. (2003): "The Grammar of Vagueness," ms., Northwestern University.
- KENNEDY, C., AND L. McNALLY (2002): "Scale Structure and the Semantic Typology of Gradable Predicates," ms. Northwestern University and Universitat Pompeu Fabra.
- KÖNIG, E. (1977): "Temporal and non-temporal uses of 'noch' and 'schon' in German," *Linguistics and Philosophy*, 1, 173–198.
- KRATZER, A. (1981): "The Notional Category of Modality," in *Words, Worlds, and Contexts*, ed. by H.-J. Eikmeyer, and H. Rieser. de Gruyter, Berlin.
- (1991): "Modality," in *Semantics. An International Handbook of Contemporary Research*, ed. by A. v. Stechow, and D. Wunderlich. De Gruyter, Berlin.
- (1998): "More Structural Analogies Between Pronouns and Tenses," in *Proceedings of SALT VIII*.
- KRIFKA, M. (1998): "Additive Particles under Stress," in *Proceedings from Se-*

- mantics and Linguistic Theory VIII*, ed. by D. Strolovitch, and A. Lawson. CLC Publications.
- (2000): "Alternatives for Aspectual Particles: Semantics of *still* and *al-ready*," Paper presented at the Berkeley Linguistics Society, February 2000.
- LEWIS, D. (1973): *Counterfactuals*. Harvard University Press, Cambridge, MA.
- LÖBNER, S. (1989): "German *schon* - *erst* - *noch*: an Integrated Analysis," *Linguistics and Philosophy*, 12, 167–212.
- MICHAELIS, L. (1993): "'Continuity' within Three Scalar Models: The Polysemy of Adverbial *Still*," *Journal of Semantics*, 10, 193–237.
- SOAMES, S. (1989): "Presupposition," in *Handbook of Philosophical Logic*, vol. IV, pp. 553–617. Reidel, Dordrecht.
- STALNAKER, R. (1973): "Presuppositions," *Journal of Philosophical Logic*, 2, 447–457.
- (1974): "Pragmatic Presuppositions," in *Semantics and Philosophy*, ed. by M. Munitz, and P. Unger, pp. 197–213. New York University Press, New York.
- VON STECHOW, A. (1984): "Comparing semantic theories of comparison," *Journal of Semantics*, 3, 1–77.
- (1996): "The different readings of *wieder* 'again': a structural account," *Journal of Semantics*, pp. 87–138.