0. Introduction

This paper deals with a newly observed phenomenon which lies at the interface of the semantics and pragmatics of aspectual *still* (as in *John is still asleep*), namely the fact that *still* is systematically infelicitous when the time described by the sentence (or more technically, the reference time) is not given a specific characterization by a temporal adverbial or the utterance context. The main claim I make is that this kind of infelicity results from the fact that in such constructions the use of *still* is uninformative.

The analysis, which is couched within a DRT framework (Kamp 1981), also argues for two more general theoretical points. First, I show that the data cannot be accounted for by using current definitions of the presupposition triggered by *still*. I propose a modified definition of *still* which, following Ippolito’s 2007 analysis, uses one eventuality variable in both the assertion and presupposition of sentences with *still*, but, unlike this theory, does not require the denotation of this variable to be contextually salient. Second, as opposed to many current theories, I show that the data on *still* supports a view where tense in past tense sentences is not necessarily anaphoric or pronominal, but rather potentially existentially closed and novel.

The novel data is described in section 1. Section 2 gives background about the anaphoric vs. novel characterization of tense and reference times and about the semantics of *still*. After examining some potential explanations of the data in section 3, and pointing out their shortcomings, I turn to my own proposal for the semantics of *still* in section 4, and show how it can account for the novel data. Section 5 examines the compatibility of the analysis with current claims on presuppositions and informativity. Section 6 concludes the paper and examines some remaining questions and directions for further research.

1. The newly observed data: felicitous vs. infelicitous occurrences of *still*

I will be concerned with felicity contrasts exemplified in (1):

(1) A: How’s John?
    B: Well, he is (still) unemployed (but we hope he will have a job soon)
    B’: Well, he was (#still) unemployed (but now he has a job)
As seen in (1), the *still*-less versions of both present and past tense sentences are felicitous. However, whereas when adding *still* to the present tense (1B) this felicity is maintained, adding it to the past tense (1B’) renders it strikingly infelicitous. Similar felicity contrasts are found in other minimally contrasting present/past tense sentences, e.g. (2)-(4):

(2) A: There is an important meeting tonight.
   B: I won’t be able to be there. I am (still) ill, and I must rest.
   B’: I won’t be able to be there. I was (#still) ill, and I must rest.

(3) A: Look at this poor building!
   B: Are you (still) living in it?
   B’: Were you (#still) living in it?

(4) A: I heard lots of stories about Mr. Smith.
   B: Me too. He is (still) very rich.
   B’: Me too. He was (#still) very rich.

What is the reason for this contrast? No direct answer to this question can be found in the literature on *still*, simply because this kind of data has not yet been examined in any theory dealing with this particle. Of course, one might be tempted to stipulate that *still* is simply bad with the past tense, and fine only with the present tense. However, not only is this generalization unmotivated, but, as the felicity of *still* in (5B)-(8B) shows, it is simply wrong:

(5) A: How’s John?
   B: Well, I saw him last month. He was (still) unemployed.

(6) A: Look at this poor building! It was so much nicer in the 1980s!
   B: Were you (still) living in it then?

(7) A: I heard lots of stories about Mr. Smith.
   B: Me too. During the war he was (still) very rich.

(8) A: There is an important meeting tonight.
   B: Yes. John came in and told me about it. But I was (still) ill, so I told him that I must rest and that I won’t be able to arrive.

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1One may claim here that a past tense answer to a present tense question as in (1B’), is, or should be, infelicitous even without *still*, due to the tense mismatch which could lead to incoherent discourse. However, all my informants accepted such discourses with no problems. One potential explanation of this could be that A is not asking how John is at the moment of utterance, but more generally, how John is ‘these days’, to which an answer encompassing the near past is relevant. Another explanation might be that the discourse is coherent because B wants to emphasize John’s present situation (having a job) by contrasting it with the past (where he was unemployed). Thanks to an anonymous reviewer for pointing out this potential difficulty.

Notice, though, that some past tense sentences may be perfectly felicitous without having clear relevance to the present. For example, a teacher can felicitously utter the out of the blue (ii). Notice that *still* is infelicitous here too:

(ii) Shakespeare (#still) lived in England.
The occurrence of *still* in these past tense sentences is a lot better than in (1B’)-(4B’) above. The difference between the two types of sentence seems to be related to the specification of the reference time. Intuitively, what all felicitous past tense sentences in (5B)-(8B) seem to share is that their reference time is specified by an adverbial in the previous sentence (as in (5)), in the sentence itself (as in (6) and (7)), or by the eventuality time of the previous sentence (i.e. the time when John told me about the meeting, in (8)). In contrast, no specification of the reference time seems to exist in the past tense (1B’-4B’), and A’s utterances in these sentences do not supply any exact specification of that time either.

It should become clear now what the felicitous past tense sentences in (5B)-(8B) share with the felicitous present tense sentences in (1B)-(4B) above: in the latter case too, the reference time can be said to be specified, namely, to refer to the speech time of the sentence. These intuitions can be informally summarized as in (9):

\[
\text{still can only be felicitous in a sentence whose reference time is specified by /}
\]

refers to another time in the linguistic or discourse context.\(^2\)

The immediate aim of this paper is to explain this novel generalization. In the next section, I examine some background assumptions concerning the two main components of the analysis, namely the characterization of reference times, and the semantics of *still*. In section 4 I show that once these two components are defined appropriately, their interaction leads to a natural explanation of the generalization in (9).

2. Some background: characterizing reference times and the semantics of *still*

2.1. Reference times, eventuality times and speech times

2.1.1 Basics. I follow here ideas developed and used in e.g. Partee 1973, 1984, Hinrichs 1986, Kamp & Reyle 1993, Ogihara 1994, Kratzer 1998. Following the tradition of Reichenbach 1947, these theories analyze the temporal structure of sentences using three temporal parameters: the speech time, the reference time, and the eventuality time.

In simple sentences, the tense node denotes a time argument which stands for the reference time of the sentence, and whose position is determined relative to the speech time.\(^3\)

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\(^2\) As pointed out to me by a reviewer, it is interesting to note that the situation with the perfect aspect seems to be the opposite, namely we get infelicity when the reference time *is* specific or anaphoric, as in (i). This ‘opposite’ correlation with the specificity / anaphoricity of the reference time may worth further exploration.

\[(i) \quad \#\text{John has been sick yesterday.}\]
Specifically, in present tense sentences, the reference time equals the speech time, and in past tense sentences, it precedes it. Locating temporal adverbs update the reference time. For example, in *John woke up at 9.00*, the denotation of *at 9.00* is processed in the beginning and updates the reference time to be a time prior to the speech time, equal to 9.00. The speech time (*now*) is a contextually salient time, and like other contextually salient arguments, its value is given by a contextually supplied assignment function $g_e$ (see e.g. Heim 1994).

As for the eventuality time, represented as $\tau(e)$, aspectual factors determine its position relative to the reference time. In simple sentences, the time of eventive/perfective predicates, is taken to be included in the reference time, whereas the time of stative or imperfective (progressivized) predicates is taken to include or overlap it. For example, in (10a), with eventive predicates, the eventuality times of seeing Mary and writing the letter are included in yesterday afternoon, whereas in (10b) the stative / imperfective eventualities of being very ill and writing the letter temporally overlap yesterday afternoon, and may even include that time:

(10)  
   a. Yesterday afternoon John saw Mary / wrote a letter  
   b. Yesterday afternoon John was very ill / was writing a letter

### 2.1.2 Are reference times necessarily anaphoric/pronominal?

Unlike the reference times of present tense sentences, whose characterization is quite simple (equal to the speech time), the situation with past tense sentences is more complicated. Prior 1967 analyzed past tense as existential quantification over times. However, as Partee 1973 shows in her famous example in (11a), taking such a sentence to talk about ‘some time in the past’ would come out wrong, no matter whether we have wide scope negation, as in (11b), which is too strong and seems false, or narrow scope negation as in (11c), which is too weak and seems trivially true:

(11)  
   a. I didn’t turn off the stove  
   b. $\neg \exists t' t' < t \land [\{I \text{ turn off the stove}\}]^{t'}$  
   c. $\exists t' t' < t \land [\{\neg I \text{ turn off the stove}\}]^{t'}$

---

3 Notice that although the use of the term ‘reference time’ in these theories is inspired by Reichenbach’s notion, it is not necessarily identical to the Reichenbachian usage. In this paper I use the terms as it is used in Partee 1973, 1984, Hinrichs 1986, Kamp & Reyle 1993, Ogihara 1994, Kratzer 1998, and as defined above. Comparing this and the Reichenbachian uses of the term is beyond the scope of this paper, but see e.g. Partee 1984 and Nelken and Francez 1995 for some comparisons.

4 Given this view, the present tense is anaphoric and not merely ‘indexical’. This is part of a general tendency in the modern semantic literature, which assumes that the traditional distinction between anaphoric (or more precisely, co-referring) and indexical (or deictic) uses of pronouns need not be maintained, and does not seem to have real linguistic significance (see e.g. the discussion in Heim & Kratzer 1998, p. 239-242). A similar position regarding anaphoric and indexical uses of tense is held in e.g. Partee’s 1973, 1984, and reviewed in section 2.1.2.

5 Heim 1993 and others take this information to be a presuppositional component of tense. For simplicity reasons, I will not attempt to represent this presuppositional status in the DRT-based analysis I propose below (although this is perfectly compatible with what I will suggest).
Instead, Partee claims, the reference time of (11a) is anaphoric to a *contextually supplied time*, e.g. the time immediately before I left home. The sentence then asserts that I didn’t turn off the stove at that (contextually supplied) time. This parallels nominal anaphoricity of ‘free’ pronouns, as in *She left me*, where the pronoun *she* is anaphoric to a contextually salient antecedent, e.g. an individual pointed at. In addition Partee shows that tense can have other kinds of antecedents that pronouns are known to have, namely definite, indefinite (i.e. existentially closed) and quantified antecedents, as in (12a-c) respectively:

(12)  a. At 3 p.m. June 21\(^{st}\), 1967, Mary had a brilliant idea
    b. Mary woke up sometime during the night. She turned on the light.
    c. When Mary telephoned, Sam was always asleep.

Following Partee, the view that tense can behave as pronominal/anaphoric is by now standard. What is not agreed upon, however, is whether tense *must* be anaphoric/pronominal. Unlike the supporters of the ‘reference time as only pronominal’ approach (e.g. Hinrichs 1986, Kratzer 1998, Avrutin & Reuland 2002, Beck 2006 inter alia), there are theories which represent the reference time in some past tense sentences as existentially closed (such as Comrie 1985, Ogihara 1994, Bonomi 1995, Musan 1997, Kehler 2000, von Fintel & Iatridou 2002, Pancheva and von Stechow 2004).\(^6\)

I tend to agree with the latter approach, since besides cases where reference times are indeed anaphoric to temporal antecedents, there also seem to be felicitous sentences where no such antecedent is found, i.e. where, using Heim’s 1982 terminology, the reference time is novel. One such construction is ‘out of the blue’ past tense questions, as in (13a) and (13b), discussed in Kratzer 1998 and Partee 1984, respectively:

(13)  a. Who built this Church? Borromini built this church.
    b. Who killed Julius Caesar?

Kratzer 1998 points out that “…the English question [in (13a)] is acceptable out of the blue. If past tense is pronominal, this is surprising. There is no contextually salient past time in this context” (p. 16). To solve the problem Kratzer suggests that what seems to be a simple past sentence in (13a) is, in fact, a sentence with present tense and perfect aspect (not to be confused with the ‘perfect’ auxiliary *have*). Thus, the reference time of (13a) is indeed pronominal: it is anaphoric to the utterance time (due to the present tense) and, due to the perfect aspect, it asserts that the event time is over by the reference (utterance) time, i.e. that the event is in the

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\(^6\) Other theories are neutral with respect to this question. For example, Abusch 1997 assumes that tense can be pronominal, but does not explicitly say whether it must necessarily be so.
past. This suggestion, however, is problematic if we want to maintain the more intuitive view that sentences like (13a) express simple past, and not present perfect.

Partee 1984 admits that the reference time of (13b) seems to be ‘some time in the past’, but maintains that it is, in fact, anaphoric, and suggests that it is “large, vague, and possibly even irrelevant ...(and)... could potentially be “the whole of the past” ” (p.314). According to her, the reason we understand the killing of Julius Caesar to happen ‘some time before now’ is because of the well known condition that the event time is included in the reference time. This explanation, however, would not work for questions with state verbs like “Who admired Julius Caesar?”, which are also understood as asking about a state which took place some time in the past. Unlike events, which are assumed to be included in the reference time (here “the whole of the past”), states are supposed to include or overlap it. It is not clear, then, why we necessarily get the existential reading in such cases too.

In addition, the reference time of some negative sentences does not seem to be anaphoric, but rather existentially closed and novel. (14), for example, neither means that John didn’t build that church in a contextually salient past time, nor that there is a contextually salient past time where he didn’t build it, but rather that he never built this church, i.e. that there is no past time which overlaps a John-building-this-church eventuality:

(14) John didn’t build this church.7

Besides ‘out of the blue’ questions and negative sentences, there are also affirmative past tense sentences, uttered in context, whose reference time seems existentially closed. I believe that (15B), the still-less version of (1B’) above, is one such sentence:

(15) A: How’s John?
    B: Well, he was unemployed (but now he has a job).

Although (15B) is not uttered out of the blue, but rather against the context of (15A), this context does not give us any information about the location of the past reference time of (15B). Intuitively, this reference time is novel, meaning ‘some time in the past’, as in (16):

(16) ∃ e,t [John-unemployed (e) ∧ t<n ∧ t O τ(e)]

There may be two potential objections to this representation. First, one may say that although the context in (15A) does not seem to supply a unique past reference time, the speaker has a certain time in mind which he is referring to when uttering (15B). However, notice that even if the speaker knows that the listener has no way of knowing when exactly John was unemployed, his use of the past tense in (15B) is felicitous. In contrast, if a speaker knows that the listener

7 Thanks to a reviewer for pointing this example to me.
has no way of identifying the denotation of the pronoun *She* in *She is nice*, he will not use the
pronoun, or else, his use of the pronoun will be infelicitous.\(^8\)

A second objection is that (16) is too weak as a representation of (15B): Clearly the
reference time in this sentence is not *any* time in the past. (It will not be, for example, an
interval in the prehistoric period). Rather, it is restricted by the presuppositions and
implications of the sentence, e.g. it is expected to be an interval which appears within John’s
life time, and most probably when he is already grown up (where being unemployed is
relevant). This can be represented in (17), where the reference time is restricted to occur within
a relevant period \(D\) (the period where John is alive and grown up):\(^9,10\)

\[
\exists e,t \ [\text{John-unemployed}(e) \land t \subseteq D \land t < n \land t \text{ O } \tau(e)]
\]

2.2 The Semantics of *still*

2.2.1 The ‘prior time’ presupposition and a potential problem with it. Turning now to the
semantics of *still*, virtually all theories analyzing this particle (e.g. König 1977, Mittwoch 1993,
implicate that \(\Phi\) *continues* at the reference time of \(\Phi\). According to these theories (18), for
example, implicates that John continues to be asleep at the speech time:

\[
\text{John is still asleep}
\]

This intuition is usually captured using an assertion and a presupposition. (18) is taken to assert
that John is asleep now, and presuppose that he was also asleep for some time before and up to
now. I will henceforth call this latter component the ‘prior time’ presupposition and will deal a
lot with the best way to precisely formalize it. Before doing that, however, let us examine a
potential problem for this approach to *still* in general.

As mentioned above, eventualities denoted by stative or progressivized predicates (with
which *still* typically occur) are standardly taken to include or overlap the reference time.
However, when the reference time is denoted by point adverbials, like “at 6.13”, “when the bell

\(^8\) In this sense, we may say that the use of past tense in (15B) is similar to the use of a specific indefinite NP as in
*John spoke with some/a woman*. As with the existential reading of the past tense, the semantic structure of such
sentences contains existential quantification over an individual woman. Even if the speaker has a certain
individual woman in mind when uttering it, this information is not part of the semantic structure, and crucially,
unlike what happens with real pronouns, the felicity of the sentence does not depend on the listener’s ability to
identify this individual.

\(^9\) Cf. claims in e.g. Bonomi 1995.

\(^{10}\) One may also claim that this restriction should not be part of the semantic structure of (15B) at all, but is
provided by the pragmatics (e.g. by the need to make a true and relevant assertion). I will not try to develop this
approach here, but continue to take (17) as a possible representation of (15B').
rang”, or even “now”, the intuitions tend to be stricter: in such cases the states seem not merely to overlap, but to *surround* the point reference times, i.e. to obtain both before and after such points of time. For example, (19a) seems to imply that the writing of the letter started before now. Similarly, unlike the eventive predicate in (19c), the stative predicate in the second sentence of (19b) seems to temporally surround the entering event, so it does not ‘move the narrative forward’, (see e.g. Partee 1984, Hinrichs 1986):

(19)  
a. John is writing a letter.  
b. John entered the room. Mary was in the living room  
c. John entered the room. Mary kissed him.

Given such observations, some theories (e.g. Moens 1987, Moens and Steedman, Vlach 1981) have taken this temporal ‘surrounding’ intuition to be, in fact, a defining property of stative predicates (sometimes referred to as ‘the superinterval property”). The problem for the approach to *still* described above is that if these theories are right, then the ‘prior time’ presupposition triggered by *still* comes out trivial. For example, the presupposition that John was asleep before 6.13 (in (20a)) would be completely trivial if the *still*-less (20b) independently entails that the sleeping state holds both before and after 6.13:

(20)  
a. At 6.13 John was still asleep  
b. At 6.13 John was asleep

Since *still* does not seem trivial in (20a) then either the assumption that the ‘prior time’ presupposition is the only contribution of *still*11, or the assumption that states must surround point reference times, should be rejected.

I believe it is the second assumption which should be rejected, since, as has been convincingly shown by other theories (e.g. Partee 1984, Hinrichs 1986, Dowty 1986, Lascarides and Asher 1993, Ogihara 1994, de Swart and Verkuyl 1999), the ‘surrounding’ effect, though intuitively strong, is, in fact, not entailed, and sometimes not even implicated by the use of stative predicates. Consider, for example, (21a,b), from Hinrichs 1986 and de Swart and Verkuyl 1999, respectively:

(21)  
a. Sue switched off the light. It was pitch dark in the room.  
b. Hilary entered the room. Phil was happy to see her.

11 That is, one can claim that *still* has an additional contribution to the semantics of the sentence. This kind of view is found in e.g. Michaelis 1993 and van der Auwera 1993, who suggest that *still* also adds the implication that the state is expected to cease at the reference time. I deal with this suggestion in section 3 below.
Here the states get an “inceptive” or an “inchoative” reading, and they do ‘move the narrative forward’. Similar examples are found in Dowty 1986, who claims that the ‘superinterval property’ of statives is a cancelable implicature, and not part of their Semantics.

Even more relevant to us are cases in which the stative or progressive predicates are used with point adverbials or in present tense. Consider, for example, the sentences in (22) (with the stative or progressive predicates underlined for clarity):

(22)  a. We weren’t sure whether John will participate in the race or not, but at 2.00, when the gun went off, he was running.  
    b. The bomb exploded exactly at 14.31 John was inside his room then. That was very lucky – half a second before he was still outside. 
    c. We did as much as we could, but at 12.34 John was dead. 
    d. The minute I saw her I was disappointed 
    e. When John left the room too I was all alone. 
    f. John dialed 911 at 17.08. At 17.19 sharp the firefighters were there.

None of these sentences entails that the state denoted by the underlined predicate holds before the time denoted by the point adverbial (e.g. that John was running before the gun went off, that I was all alone before John left the room, etc.). In fact, given the contexts constructed in these examples, such readings would be quite odd. Assuming that states necessarily surround point reference times would wrongly predict such sentences to be infelicitous.

Less extreme cases are illustrated in (23). Here the states can be understood as surrounding the reference time. But crucially, this is not necessary:

(23)  a. When John heard that his father died he was miserable 
    b. (The pilot to the passengers): We are in the air! 
    c. Oh no! The baby is awake! 
    d. John entered the boss’s room at 2.00. At 2.01 he was unemployed. 
    e. At 6.13 John was asleep.

(23a), for example, is potentially ambiguous between a reading where John was already miserable when he heard the bad news, and a more salient one where he wasn’t (he became miserable as a result of hearing the bad news). Similarly (23b) can be uttered just as the plane takes off (so ‘being in the air’ is not necessarily true before now), (23c) can be true if the baby was asleep a second ago, (23d) can be true even if a second before 2.01 John was not

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12 This seems to be related to the understood causal relation between the first and second eventualities in (21) (see Lascarides and Asher 1993).

13 Thanks to Susan Rothstein (p.c.) for pointing out this example to me.
unemployed yet and (23e) can, in fact, be true even if John was not asleep before 6.13. This is exactly the reason why adding still to such sentences they nontrivially entail that the states hold also before the reference time. For example, adding still to (23a) (When John heard that his father died he was still miserable) clearly disambiguates it, excluding the reading where John became miserable when he heard the bad news. The same holds for the other sentences in (23).

To summarize, still indeed triggers a ‘prior time’ presupposition, and this presupposition is not trivial, exactly because in reality states do not necessarily surround their reference time, but only overlap or include it.\(^{14}\)

We can now turn to a closer and more precise examination of this ‘prior time’ presupposition.

2.2.2 Two formulations of the assertion and presupposition of sentences with ‘still’: I will focus here on two formulations of the assertion and presupposition of sentences with still found in the literature. First, following Löbner 1989, Krifka 2000 defines the assertion and presupposition of sentences like (18) as in (24), where \( \Phi(t) \) is true iff \( \Phi \) is true throughout an interval \( t \), and \( t \propto t' \) iff \( t' \) began before \( t \) and abuts it (cf. König 1977, Mittwoch 1993):

\[
\text{(24)}
\]

a. **Assertion:** John is asleep (\( t \))

b. **Presupposition:** \( \exists t' t' \propto t \ [\text{John is asleep (}t')] \)

Using the more detailed temporal framework reviewed above with speech times, reference times and eventuality times, the assertion of (18), which is identical to the assertion of the still-less sentence John is asleep, will be represented as in (25a), asserting that there is a sleeping eventuality of John whose time overlaps the speech time (now). Given this, the presupposition of (18) in (24b) can be rephrased as in (25b), saying that there is a sleeping eventuality of John whose time overlaps some time prior to and abutting now:\(^{15}\)

\[
\text{(25)}
\]

a. **Assertion:** \( \exists e,t \ t=\text{now} \land \text{asleep (}e, \text{john}) \land t \propto \tau(e) \ (=\text{John is asleep}) \)

b. **Presupposition:** \( \exists e,t' \ \text{asleep (}e, \text{john}) \land t' \propto \text{now} \land t' \propto \tau(e) \)

\(^{14}\) Of course, this conclusion is dependent on the assumption that there is no subclass of stative predicates which necessarily entail (and not only strongly implicate) the truth of the eventualities at a time before the reference time. If such stative predicates are found then we should expect still to be systematically infelicitous with them. Felicity of still with such hypothesized predicates will indeed pose a difficulty for the theories followed in this paper, which take the contribution of still to the sentence to be its ‘prior time’ presupposition. However, that I am not aware of a such a subclass. Notice, for example, that although Ogihara 1994 claims that progressivized predicates cannot be inchoative (i.e. that they must have the ‘superinterval property’), this characterization does not seem right in light of the perfect felicity of (22a) above, with a progressivized verb. But further research should look more closely at this question.

\(^{15}\) It is important to notice that the overlap relation between the eventuality time and the reference time will hold for all sentences with still, since, as seen in (i) and (ii), still is compatible with lexical stative or progressivised verbs but not with eventive verbs (see e.g. Michaelis 1993):

(i) John was (still) on the roof/running

(ii) John (#still) spoke with Mary/ran.
A somewhat different semantics for *still* is proposed in Ippolito 2007. (26) is a simplified version of Ippolito’s truth conditions for the sentence *John is still cooking*, where $e_1$ is a free eventuality variable, whose value is supplied by the context:

(26)  
\begin{align*}
\text{a.} & \quad \text{“John is still cooking” is defined if } \exists t' < \text{now} \ [ t' \subseteq e_1 \text{ and } \text{time}(e_1) \text{ is a time at which John is cooking}] \\
\text{b.} & \quad \text{If defined, “John is still cooking” is true iff now} \subseteq e_1 \text{ and time}(e_1) \text{ is a time where John is cooking}
\end{align*}

It is crucial for Ippolito that the eventuality variable in both the presupposition (in (26a) and assertion in (26b) denotes the same (contextually salient) eventuality. According to her, this guarantees the ‘continuity’ feeling found with aspectual *still*:

The sentence *John is still cooking* presupposes that there is a time earlier than the speech time such that the running time of a salient eventuality of John’s cooking includes this past time, and asserts that of that eventuality that its running time includes the speech time.[…..] because the assertion is about that very salient eventuality, the sequence [“Two days ago John was cooking. He is still cooking”] 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 that it overlap a past time. (Ippolito 2007: 11)

In contrast, in the reformulation of Krifka’s definition in (25) above, the assertion and the presupposition need not necessarily talk about the same eventuality of John’s sleeping (or cooking), and the continuity intuition is captured by explicitly using the abutting relation. In addition, unlike Ippolito, who insists that the eventuality argument in sentences with *still* is contextually salient, no such requirement is made in the definition in (25).

3. Some potential explanations of the data

Before presenting my own account of the contrast between felicitous and infelicitous occurrences of *still*, repeated in (27), let us briefly look at some alternative explanations of it:

(27)  
\begin{align*}
A: & \quad \text{How’s John?} \\
B: & \quad \text{He was (#still) unemployed} \\
B': & \quad \text{He is still unemployed} \\
B'': & \quad \text{Last June, he was still unemployed}
\end{align*}

First, one might try to use the contextual saliency of the eventuality argument, required in Ippolito 2007. Ippolito explicitly claims that ‘out of the blue’ utterances with *still*, where no such contextually salient eventuality is present, are infelicitous:

the sentence [*John is still cooking*] 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. Therefore, the sentence *John is still cooking* cannot be felicitously uttered out of the blue. [p 10]
One might want to claim, then, that the reason for the infelicity of still in (27B) is that although the sentence is not uttered out of the blue, but against the context of A’s question, this context does not supply any salient past eventuality of John being unemployed.

However, given the felicity of (27B’) and (27B’’) this cannot be right. The only difference between (27B) and (27B’) is tense. Crucially, both are uttered against the same context, and in neither of them is there any reference to a salient eventuality of John being unemployed. Similarly (27B’’) differs minimally from (27B) in that the reference time is said to be last June (instead of being unspecified). This sentence too does not make the eventuality of John being unemployed any more salient than (27B) does. The problem with (27B), then, has to do with the saliency of the reference time, not that of the eventuality argument.

In general, then, we see that the eventuality referred to by the VP need not be salient in order for still to be felicitous. In fact, this can be seen even in completely ‘out of the blue’ utterances with still. (28) can be the first thing I say to a guest of mine as I open the door for her. Crucially, even if the guest doesn’t know in advance that the baby was asleep, (or, for that matter, that I have a baby), she could easily accommodate this information:

(28) The baby is still asleep. Please be quiet!

In addition, we cannot attribute the infelicity of (27B) to a general difficulty in accommodating presuppositions, of the sort which has been claimed for the presuppositions of too and again (see, for example, Geurts & van der Sandt 2004, Zeevat 2003). The felicity of (27B’) and (27B’’) indicates that no such general problem is found with still. The felicity of (28) also shows the ‘prior time’ presupposition triggered by still can be accommodated like other types of presuppositions, e.g. those triggered by definite (like the baby).

Another promising idea is to try and attribute the contrast in (27) to the tendency of sentences with still to express surprise that the state (referred to by the VP) continues and hasn’t stopped yet. For example John is still asleep seems to implicate or presuppose surprise at the fact that John is asleep now, although he was no longer supposed to be asleep. One might want to claim, then, that this kind of ‘surprise’ implication can only arise when the reference time is specified. For example, it is not surprising that there is a time at which John continued to be asleep, if he was asleep, but it may be surprising now, or at 5 p.m. or when Harry arrived. Perhaps the lack of ‘surprise’ effect is what causes the infelicity of (27B).

However, as has been already noted in e.g. Löbner 1999 and Krifka 2000 inter alia, the ‘surprise’ effect seems to be cancellable implication of sentences with still. Consider (29a,b):

16 See, for example, van der Auwera 1993, who formulates this implication as falsity of the asserted state in the ‘worlds of expectations’. Thanks to an anonymous reviewer for pointing out this potential explanation.
a. Unsurprisingly, John was still angry this morning. (This was expected given the way he was treated yesterday).

b. Given the fact that you went to sleep so late yesterday night, it is not surprising that you are still very tired.

c. Usually John is still asleep at 7.00 (Unexpectedly today, he is awake)

The sentences in (29) are perfectly felicitous, despite the fact that the ‘surprise’ implication seems to be explicitly cancelled in them. Thus, as argued in Löbner and Krifka, this kind of component does not seem to be an inherent part of the semantics of still, but is a conversational implicature. It would be strange to claim, then, that the striking infelicity of (27B) is due to the fact that this cancellable implicature does not arise. Moreover, as seen in (30), the felicity contrast between past tense and present tense sentences with still remains the same even in cases in which the ‘surprise’ implication is cancelled. This is unexplained if the reason for this contrast is the existence or absence of the ‘surprise’ implication:

(30) A: How’s John?
B: Unsurprisingly, he was (#still) unemployed.
B’: Unsurprisingly, he is (still) unemployed.

It seems, then, that a different direction is needed in order to explain the infelicitous occurrence of still. In the next section I turn to develop such a direction.

4. The analysis

4.1 A modified, DRT style, definition of still

Since we will be dealing here with updating reference times in different contexts, it will be very useful to couch the semantics of still within a DRT framework, in which such pieces of information are easily represented. I assume familiarity with DRT, and will make the following simplifications and notational decisions: I will use a bracket notation, as in Geurts 1999, in which the variable e is used for all eventualities and (ignoring tense for a moment) the DRS of

17 Both attribute it to the interaction between the semantics of still and the Gricean maxim of relevance.

18 One may argue that the ‘surprise’ effect with still should be always evaluated with respect to a certain perspective, so that even with explicit adverbials like ‘unsurprisingly’, it is possible to have in mind a perspective with respect to which it is in fact surprising that e.g. John continues to be angry this morning, or continues to be asleep at 7.00 (in (29a) and (29c), respectively). If this direction is taken, however, we should be able to say very precisely why it is that the existence of a perspective for a surprise effect is always possible with specific or anaphoric reference times, but systematically blocked with existentially closed ones.

Such problems may be solved once a precise theory of the surprise effect with still is developed. At the present stage, however, this direction does not seem to provide a satisfying way of accounting for the newly observed data described in section 1.
John ran will be \([e: \text{john-run}(e)]\) instead of the more precise \([e,x: x=\text{john}, \text{run}(e,x)]\) (or the even more precise \([e,x: x=\text{john}, \text{run}(e), \text{agent}(e)=x]\)). This is because the focus of this paper is on the relationship between times, not individuals. For this reason, I will not try to systematically capture nominal anaphora. For example, I will represent the second sentence of John left the room. He was tired as \([e: \text{john-tired}(e)]\) (again ignoring tense). I will take the relationship between the reference time and the imperfective eventuality time (e.g. running time of lexical statives and progressives) to be \(O(\text{overlap})\) instead of inclusion \((\subseteq)\) (though using inclusion will be just as compatible with my claims below).

For illustration, let us look at the representation of the present tense (31a) in (31b):

(31) a. John is asleep
   b. \([n, t, e: \text{john-asleep}(e), t=\text{now}, tO\tau(e)]\)

In (31b), the reference time of the clause, namely \(t\), is equated with the speech time (‘now’), since the sentence is in the present tense, and is taken to overlap the eventuality time, since the type of eventuality is stative. After existential closure the sentence asserts that there is a sleeping eventuality of John whose time overlaps the speech time interval (i.e. now).

Having these notational issues in mind, I propose the following modified definition of the assertion and presupposition of still (where \(t_r\) and \(t_{ps}\) stand for the reference time of the sentence, and the time variable introduced in the ‘prior time’ presupposition, respectively):

(32) Assuming a clause \(\Phi\), with reference time \(t_r\) and a predicate \(P\) with an eventuality \(e\) s.t. \(P(e)\),

(a) still \(\Phi\) is defined iff the universe of \(\Phi\) has a time interval \(t_{ps}\) which meets the following two conditions: \(t_{ps} \leq t_r, t_{ps} O \tau(e)\)

(b) If defined, then still \(\Phi\) is true iff \([t_r,e: P(e), t,O\tau(e)]\)

Notice that, as in the reformulation of Krifka’s definition in (25) above, here too the assertion of still \(\Phi_s\) given in (32b), is equivalent to the assertion of the corresponding \(\Phi\) without still. Thus, the only thing we have to add to the DRS of a sentence with still is the ‘prior time’ presupposition, given by the definedness condition in (32a). Following Geurts’ 1999 notation of underlying presupposed material, then, the DRS of the present tense (33a) will be (33b), which, after existential closure will give us (33c):

(33) a. John is still asleep
   b. \([n, t, e, t_{ps}: \text{john-asleep}(e), t=\text{now}, tO\tau(e), t_{ps} \leq t, t_{ps} O \tau(e)]\]
   c. \(\exists e [\text{John-asleep}(e) \land nO\tau(e) \land \exists t' t' \leq n \land t'O\tau(e) ]\)
(33b) asserts that some eventuality where John is asleep overlaps now and presupposes that this eventuality overlaps some time prior to now as well. Since, using van der Sandt’s 1992 and Geurts’ 1999 terminology, there is no ‘antecedent’ for the ‘prior time’ presupposition in the context or in previous utterance, it is accommodated, i.e. added to the DRS of the clause.\(^{19}\)

The proposal is very similar to previous proposals about the semantics of still, but it is not identical to them. Specifically, the definition of still in (32) follows Ippolito’s 2007 idea that the presupposition and the assertion necessarily talk about the same eventuality. In addition, as in Ippolito, the temporal relationship between the ‘prior time’ \((t_{ps.})\) and the reference time is defined as anteriority, and not as the stricter ‘abutting’ relationship used in Krifka’s 2000 definition. On the other hand, given our discussion in section 3, the definition is unlike Ippolito’s and like the reformulation of Krifka’s definition in (25), in allowing the \(e\) variable to be existentially closed, and not requiring it to denote a contextually salient eventuality.

4.2 Accounting for the data

4.2.1 ‘Still’ with existentially closed reference times. We are now in a position to explain the infelicitous occurrences of still described above. In section 2.1.1 above we suggested that the reference time of the past tense still-less (34a) is existentially closed. Starting from the ‘unrestricted’ version of the DRS in (16) above, repeated here as (34b), adding still (as in (34c)) will give us DRS (34d):

\[
\begin{align*}
(34) & \quad a. \quad \text{(How is John?) – He was unemployed (but now he has a job)} \\
& \quad b. \quad [n, e, t: \text{John-unemployed (e), } t<n, t \circ \tau(e)] \\
& \quad c. \quad \text{(How is John?) - #He was still unemployed (but now he has a job)} \\
& \quad d. \quad [n, t, e, t_{ps}: \text{john-unemployed (e), } t<n, t \circ \tau(e), t_{ps} < t, t_{ps} \circ \tau(e) ]
\end{align*}
\]

According to (34d), (34c) asserts that an eventuality where John is unemployed temporally overlaps some past time, and presupposes that this eventuality temporally overlaps some time prior to that past time as well. More intuitively, the meaning we get is that a state of John being unemployed continues at some past time.

Why is this meaning infelicitous, then? The reason, I suggest, is that it is not informative. Intuitively, if the denotation of \(t\) is not salient, then saying that a state \(P\) continues at \(t\) (the information of the sentence with still) does not add anything to saying that a state \(P\) holds at \(t\) (the information of the sentence without still). More precisely, in such a case, both

\(^{19}\) van der Sandt 1992 and Geurts 1999 assume that accommodated presuppositions are projected as high as possible. This is irrelevant in (33b) since the home DRS of the presupposition is also the top DRS here.
the assertion and the prior time presupposition of \( \Phi \) can be met in the \( \text{still} \)-less \( \Phi \) as well. Consequently the use of \( \text{still} \) is unjustified and thus its presence is infelicitous.

To see this more clearly, consider the schema in (35a) for the \( \text{still} \)-less (34a), where there is some past time \( t \) which temporally overlaps a John-unemployed eventuality. Given the indicated context, the denotation of \( t \) is not being made salient in any way. We further assume that states are not temporally instantaneous, e.g. that the time of being unemployed is a non-singleton interval:

\[
\text{(35a) Unemployed (j)}
\]

\[\underline{\text{---------}}\underline{\text{------------------------now}}\]

Crucially, this information is enough to guarantee that both the assertion and the 'prior time' presupposition of (34c) ("John was still unemployed") are met. More specifically, given the information in (35a) one can automatically infer (35b):

\[
\text{(35b) Unemployed (j)}
\]

\[\underline{\text{---------------t---------now}}\]

\[\underline{\text{t''} \mid \text{t'}}\]

Given the information in (35b), we can infer both that (a) there is a past subinterval of \( t \), \( t' \), which overlaps a ‘John-unemployed’ eventuality (namely the assertion of \( \text{John was still unemployed} \)), as well as (b) that there is another past subinterval of \( t \), \( t'' \), such that \( t'' < t' \) which also overlaps a ‘John-unemployed’ eventuality, (namely the presupposition of \( \text{John was still unemployed} \)). The result is, then, that by accepting the truth of (34a) (\( \text{John was unemployed} \)), we can automatically infer both the assertion, as well as the ‘prior time’ presupposition of (34c) (\( \text{John was still unemployed} \)). But, crucially, this ‘prior time’ presupposition is the contribution of \( \text{still} \) to the sentence (remember that the assertion of \( \text{still p} \) is just like that of \( p \)). Thus, both this presupposition, as well of the assertion, are met without \( \text{still} \), so using \( \text{still} \) is unjustified and vacuous, and hence, infelicitous.

Notice that the same problem remains when we take the existential quantification over the reference time of (34a) to be restricted, as in (17) above, repeated here as (36):

\[
\text{(36) } [n, e, t: \text{John-unemployed (e), } t \leq n, t \subset D, t \in \tau(e) ]
\]

As explained in section 2.1.2 above, the idea of having the restriction \( D \) in (36) is that the unrestricted existential quantification in (34b) seems too permissive: In thinking about some time in the past which overlaps a John-unemployed state we clearly don’t talk about e.g. a time where John was not born yet, or where he was a baby. Thus \( D \) in (36) is characterized by the presuppositions and implications of the sentence, and can be thought of as, e.g. the period
where John is alive and grown up, which properly includes the eventuality time where John is unemployed. Given these considerations the still-less (34a) can be represented as in (37a):

\[(37a) \quad \underline{\text{Unemployed (j)}} \]
\[\underline{t} \quad \text{---now} \]
\[\underline{\text{....左手}} \quad \text{period where John is alive and grown up} \]

Now adding the prior time presupposition to the ‘restricted’ (36) will give us DRS (38):

\[(38) \quad [n, t, e, \text{tps} : \text{john-unemployed (e), } t < n, t \in D, t O \tau(e), \text{tps} \leq t, \text{tps} \subset D \text{tps} O \tau(e)] \]

(38) says that some past time t, inside a relevant period D, overlaps some John-unemployed eventuality and that some time tps, prior to t, which is also in that period D, overlaps this eventuality as well.

The problem is that, as with the unrestricted version of (34a), here too the use of still is uninformative. This is because here too we can always ‘divide’ the reference time of the still-less version of the sentence into a past time t’, and a past time prior to t’, t’’, both overlapping the time of the unemployed eventuality. This is seen in (37b):

\[(37b) \quad \underline{\text{Unemployed (j)}} \]
\[\underline{t’’} \quad \underline{t’} \quad \text{---now} \]
\[\underline{\text{....左手}} \quad \text{D} \]

In such a case too, then, we can infer both the assertion and presupposition of the version with still (namely DRS (38)) from the still-less version (DRS (36)). Thus the uninformativity, and hence the infelicity of still is accounted for.

\[4.2.2 \text{ still with point adverbials and punctual reference times.} \quad \text{In contrast to the infelicitous presence of still in (34c), consider the perfect felicity of this particle in (39a) or (39b):} \]

\[(39) \quad \begin{align*}
\text{a. (How’s John?). Well, a month ago he was (still) unemployed.} \\
\text{b. At 6.00 p.m., I was (still) in my room.}
\end{align*} \]

Here, the reference time is anaphoric to the salient time which is a month before the speech time, and to 6.00 p.m., respectively. We know that states overlap, and do not necessarily surround their reference time (see again the discussion in section 2.2.1). The prior time presupposition, then, rules out the possibility that the state starts only at the point reference

\[\text{Notice that since tps is required to overlap the unemployed eventuality as well, it must be included in D, just like t. This is because of the nature of the restriction D, as being a period where being unemployed can be true and relevant at all. Assuming that tps is not in D will lead to the unreasonable scenario where John is unemployed before he is alive and / or grown up.} \]
time, and ensures that it holds before it. Consequently, the use of *still*, which triggers the ‘prior time’ presupposition is informative and felicitous. For illustration, consider the DRS for the *still*-less version of (39b) in (40a) and two possible schemas for it, i.e. (40b) and (40c):

\[
\text{(40) a. } [n, t, e: \text{I-in my room (e), } t<\text{now, } t=6, \ tO\tau(e)] \\
\text{b. } \quad \text{in my room (I)} \\
\phantom{\quad \text{in my room (I)}} \text{---------6-------------------now} \\
\text{c. } \quad \text{in my room (I)} \\
\phantom{\quad \text{in my room (I)}} \text{---------6-------------------now}
\]

(40a) requires that the ‘being in the room’ eventuality temporally overlaps the reference time, which, in this case, is 6.00. As claimed in section 2.2.1 above, this is compatible with a case like (40b), where I am in my room before 6 as well, and also with a case like (40c), where I being in the room started at 6.00. Adding *still* yields the DRS in (41):

\[
\text{(41) } [n, t, e, t_{ps.}: \text{I-in my room (e), } t<\text{now, } t=6, \ tO\tau(e), t_{ps.}<t, t_{ps.}O\tau(e)]
\]

(41) asserts that some being-in-the-room eventuality overlaps a past 6 p.m. time, and presupposes that this eventuality also overlaps some time before that 6 p.m. time. Once the prior time presupposition is added, then, the DRS is now only compatible with a situation like (40b), and rules out a situation like (40c). Thus, there is no way of automatically inferring, on the basis of the *still*-less DRS in (40a), the presupposition in (41), namely that I was also in my room before 6 p.m.. This information has to exist in the common ground, or else, has to be accommodated by the listener. Thus, *still* is not equivalent to *p*, since it is true in fewer situations than *p*. Hence the use of *still*, then, is informative, justified and felicitous. The same holds for all examples with point adverbials (in e.g. (23) above).

Notice that the punctual reference time need not be explicitly supplied by a point adverbial in order for *still* to be felicitous, but can be supplied by context. Clear examples where this happens are present tense sentences, whose reference times are anaphoric to the contextually salient utterance time, as in (23b,c) above, repeated here as (42a,b):

\[
\text{(42) a. } \text{(The pilot to the passengers): We are (still) in the air!} \\
\text{b. } \text{Oh no! The baby is (still) awake!}
\]

As explained in section 2.2.1 above, the *still*-less versions are compatible with scenarios in which the eventuality time starts at the speech time. (42a), for example, can be uttered just as the plane takes off and (42b) can be uttered even when the baby was asleep until now. The addition of *still* excludes these situations and thus its use is informative and felicitous.

\[21 \text{ It is also compatible, of course, with a situation where being in my room equals 6, or ends at 6.} \]
There are, of course, other cases of contextually salient times. In a context where we talk about Yitzhak Rabin’s murder, the reference time of a sentence like (43) will be anaphoric with the time of the murder, so *still* will be informative and felicitous too:

(43) John was (still) in London.

### 4.2.3 Still with frame adverbials and non-punctual reference times

One may hypothesize at this point that *still* is felicitous in e.g. (39b), (42) and (43) above because the reference times in these sentences are “short” or punctual so, unlike the reference time in the infelicitous past tense (35c) above (*#John was still unemployed*), they cannot be ‘divided’ into two successive subintervals.

But this hypothesis is refuted by the felicity of *still* with ‘frame’ temporal adverbials, as in examples (6) and (7) above, or as in (44) or (45). Such adverbials denote ‘long’, non-punctual times, which can, in principle, also be ‘divided’ into two successive subintervals:

(44) In the summer, Anne was (still) writing her book.

(45) Mary was (still) in France in June.

To understand why *still* is felicitous in these sentences, we first have to examine their temporal structure. There are, in fact, two views in the literature regarding the representation of frame adverbials, and as we shall see now, the interpretation and felicity of *still* with such adverbials can help us decide between them.

According to Pancheva & von Stechow 2004, for example, frame adverbials as in (44) and (45) denote time intervals which include or are equal to the reference time of the sentence. Given this view, the *still*-less version of e.g. (45) would have the DRS as in (46). Adding *still* would give us (47), asserting that there is an eventuality of Mary being in France which overlaps some past time t included in (or equal to) June, and presupposing that this eventuality overlaps some time prior to that past time t:

(46) \[n,t,e: \text{Mary-in-France}(e), t<n, t\subseteq\text{June}, \tau(e)O_t\]

(47) \[n,t,e,\tau_{ps}: \text{Mary-in-France}(e), t<n, t\subseteq\text{June}, \tau(e)O_{\text{ps}}, t_{ps}<t, \tau(e)O_{t_{ps}}\]

But if we follow (47), it is not clear why (45), unlike the past tense (35c) above, is felicitous. Following the reasoning described above, here too we should be able to derive the truth of (45) from the truth of its *still*-less version: Once there is some past interval within June which overlaps e, we can always infer that (a) there is a subinterval of that time, also within June, overlapping with e, and (b) there is a successive subinterval of that time, also within June,
which overlaps e as well. The use of still, then, is predicted to be uninformative and hence, infelicitous, just as in (35c) above. However, unlike (35c), (45) is perfectly felicitous.

One possible conclusion can be that our explanation of the infelicity of (35c) above, in terms of the uninformativity of still, is on the wrong track. I will suggest, however, that this explanation is correct, and instead, it is the DRSs in (46) (and consequently also (47)) which are wrong. The main independent reason to suggest this is that a DRS like (46) does not correctly capture the interpretation of sentences like (45): Taking the reference time in this sentence to denote some time which is included in or equal to June, as in (46), is compatible with asserting that Mary was in France from June 17\textsuperscript{th} to June 24\textsuperscript{th} (a time within June), and presupposing that she was also in France before that time, e.g. from June 13\textsuperscript{th} to June 17\textsuperscript{th}. But the real presupposition of (45) is that Mary was in France before June, i.e. at least during the last day(s) of May. This is evident from the infelicity of (48):

(48) #Mary was still in France in June. She arrived there on June 13th.

A better representation of (45), then, should take the denotation of the adverbial to be identical to the reference time, as suggested in e.g. Kamp & Reyle 1993, and Artstein 2005. E.g. (49) and (50) would be the DRS of (45b) without and with still, respectively:

(49) \([n,t,e:\text{Mary-in-France}(e), t<n, t=\text{June}, \tau(e)\text{Ot}]\)

(50) \([n,t,e,\tau_{ps}:\text{Mary-in-France}(e), t<n, t=\text{June}, \tau(e)\text{Ot}, \tau_{ps}<t, \tau(e)\text{Ot}_{ps}]\)

(50) asserts that an eventuality of Mary being in France overlaps some past time which is June, and presupposes that this eventuality also overlaps some time before that June. This DRS is supported both by the interpretation of (45), since it correctly captures the intuition that (45) presupposes that Mary was in France (at least some time) at the end of May, as well as by the felicity of still in it: Assuming the DRSs in (49) and (50), the presupposition triggered by still cannot be derived from the truth of the still-less version: Although it is true that we can ‘divide’ the reference time, i.e. June, into two succeeding intervals (e.g. June 1\textsuperscript{st} to 15\textsuperscript{th}, and June 16\textsuperscript{th} to 31\textsuperscript{th}) these two subintervals would not correspond to the intervals in the presupposition and assertion of (45), respectively, because the former requires that being in France overlaps a time before June (and not before part of June). Crucially, this kind of information cannot be inferred from the still-less version, and must be supplied by the context, or accommodated. Hence, the use of still in (45), as well as in other sentences with frame adverbials, is informative and felicitous.

Finally, just like punctual reference times, which need not be explicitly referred to by point adverbials, but can be anaphoric with contextually salient punctual times (e.g. the speech
time in present tense sentences), non-punctual reference times too can be supplied not only by frame adverbials, as in (44) and (45), but also by a contextually salient ‘periods’. Consider, for example (51) and (52) in the indicated contexts:

(51)  (Context: we are in a history class dealing with the middle ages)  
The lecturer: Don’t forget that people believed in ghosts (then)!

(52)  (Context: we are in a middle of a conversation about John’s sabbatical many years ago.)  
John: I was an associate professor (then).

In the indicated contexts the reference time of these sentence is t<n, t=the middle ages, and t<n, t=my sabbatical, respectively. Thus, both sentences can be paraphrased by adding the deictic adverbial then to them. We predict that adding still to such sentences will be felicitous, even without the addition of an explicit “then”. This prediction is borne out:

(53)  (Context: we are in a history class dealing with the middle ages)  
The lecturer: Don’t forget that people still believed in ghosts!

(54)  (Context: we are talking about John’s sabbatical many years ago.)  
John: I was still an associate professor.

Since in both cases the reference time is anaphoric to the contextually salient period, still is informative and felicitous. It triggers the presupposition that the state holds also before that period, i.e. that the church believed in ghosts before the middle ages, and that I was an associate professor before my sabbatical as well, respectively.

It is important to notice, then, that contextually salient periods are different from ‘relevant’ periods, of the sort we looked at in the restricted reading of “John was unemployed”. ‘Relevant periods’ (e.g. the period where John is alive and grown up, in the case of considering “John was unemployed”), are triggered by the presuppositions and / or implications of the sentence, and constitute domain restrictions, D, on the existential quantification over the reference time (i.e. we assume that t⊂D). In contrast, as we saw above, contextually salient periods (as in examples (51) and (52)), do not constitute domain restriction on the existential quantification over the reference time, but rather give the value of the reference time, just like the denotation of explicit frame adverbials (and similar to denotation of punctual adverbials).

That is, if PC is a contextually salient period and t is the reference time of the sentence then we take t=PC and not t⊂PC22.

---

22 This difference between ‘relevant’ periods, which can function as domain restrictions on the default existential quantification and ‘contextually salient’ ones, which cannot, raises several interesting questions, which are,
The difference between the two types of periods can be tested by paraphrases with the deictic adverbial *then*. Unlike (51) and (52), with contextually salient periods, where using *then* is natural, when we have implicit domain restricting the existential quantification over times which is not contextually salient but ‘relevant’, the use of *then* is odd. This is seen in (55), (assuming, as before, that A's question is the only context for B's answer):

(55)  
A: How’s John?  
B: Well, he was unemployed (#then).

4.2.4 One eventuality, not two, in the definition of *still*  
The data with frame adverbials, examined above, supports Ippolito’s 2007 claim, adopted in the definition in (32) above, that the assertion and presupposition triggered by *still* make use of one eventuality. To see why this is the case suppose that instead of (32), the definition of the assertion and presupposition of *still* was (56), where the presupposition of *still* makes reference to a new P eventuality variable, and the temporal continuity between the presupposed and the asserted eventuality (which in Ippolito’s theory are captured by using a single state), is guaranteed by explicitly using Krifka’s 2000 abutting relation:

(56) An alternative semantics for *still* (with no guarantee for one eventuality):
Assuming a clause \(\Phi\), with reference time \(t_r\) and a predicate \(P\) with an eventuality \(e\) s.t. \(P(e)\),
(a) *still* \(\Phi\) is defined iff the universe of \(\Phi\) has a time interval \(t_{ps}\) and an eventuality \(e'\), which meet the following conditions: \(P(e'), t_{ps} \alpha t, t_{ps} O \tau(e')\)
(b) If defined, then *still* \(\Phi\) is true iff \([t_r,e: P(e), t, O \tau(e)]\)

Given this alternative definition of *still*, and assuming, as before, that the DRS of the *still*-less (57) is (58), the DRS of (57) with *still* would be now (59) (instead of (50) above):

(57)  
In June Mary was (still) in France

(58) \([n,t,e: \text{Mary-in-France}(e), t<n, t=June, \tau(e)Ot]\)

(59) \([n,t,e,t_{ps} e': \text{Mary-in-France}(e), t<n, t=June, \tau(e)Ot, t_{ps}\alpha t, \text{Mary-in-France}(e'), \tau(e')O_{t_{ps}}]\):
(59) asserts that some eventuality e where Mary is in France overlaps some past June, and presupposes that some such eventuality, e’, overlaps some time prior to and abutting that June. It is important to notice that although e and e’ in this DRS are different eventuality variables they do not necessarily denote different eventualities. This possibility leads to predicting incorrect truth conditions for (57), since now the DRS in (59) is compatible with a discontinuous stay of Mary in France, e.g. with a situation where Mary arrived in France from May 24th to the end of May (which is a time prior to and abutting June), left France, and came back to France from June 23rd to June 29th. In such a case, it is true that there is a being-in-France eventuality which overlaps June, and that there is a being-in-France eventuality overlaps a time prior to and abutting June, as (59) requires. The problem is that (57) with still would be infelicitous in such a case, since it presupposes that Mary continuously stayed in France from some time before June to at least some time in June.23

This indicates, indeed, that the use of still requires one and the same eventuality in both the assertion and the presupposition, as required by Ippolito. Assuming that one eventuality of being in France cannot be discontinuous (see e.g. Rothstein 2004 on temporal continuity of singular eventualities), it is indeed the definition (32) above, with one eventuality variable, which can guarantee the required continuous stay of Mary in France.

Similar argumentation can be used to show that defining still in temporal terms only (as in Krifka’s original definition in (24) above), without using an event based semantics, is not enough. Applying this definition to (57) will give us (60), asserting that the sentence ‘John is in France’ is true at a time which is last June, and presupposing that there is some time before last June in which this sentence is true as well:

(60) a. Assertion of (57): John is in France (t) ∧ t = last June

b. Presupposition of (57): ∃t’,e t’ ∝ t [John is in France (t’)]

Since (60a) can hold if John was in France only part of June (e.g. from June 19th to June 26th), the problem is, again, that (57) is wrongly predicted to be felicitous in a case where John was in France from May 24th to May 31st, left France and returned on June 23rd. In contrast, using an event based semantics with one eventuality in the assertion and presupposition of still, as done in Ippolito 2007 and adopted here, makes the right predictions.24

23 Such a situation, though, will make (i), with again, fine;
   (i) In June Mary was in France again.

24 A potential counterexample to the event based analysis of still, pointed out by an anonymous reviewer, is (i):
   (i) There is still a guard at the gate.
4.2.4 ‘Still’ with familiar existentially closed reference times

Based on the comparison between the felicitous and infelicitous sentences above we may want to suggest that still can only be felicitous when the reference time is not existentially closed. A closer examination, however, shows that this generalization is still not precise enough. Consider (61):

(61) John opened the door. Mary was (still) undressed. (So she told him to wait in the living room)

In (61), the past tense sentence with still appears after another past tense sentence. Partee 1984 discusses similar discourses without still (as in (11) above) and argues that the reference time of the second sentence is anaphoric to the existentially closed time of the first one, in a similar manner to the way pronouns (like it in (62)) can be anaphoric with an existentially closed nominal antecedent. Following this approach (61) would have the DRS in (63):

(62) Pedro owns a donkey. He beats it.

(63) \[ n,e,e',t',t_{ps} : john- open-the-door (e), t<n, \tau(e) \subseteq t, mary-undressed (e'), t'<n, t'= \tau(e), \tau(e') O t', t_{ps} \]

According to (63), the first sentence in (61) asserts that there is some opening the door eventuality by John whose time is included in some past time t. This eventuality time supplies the reference time for the second sentence, which says that there is some Mary-being-undressed eventuality whose (past) time overlaps the time where John opened the door. The reference time of the second sentence, then, is indirectly anaphoric with the existentially closed time of the first sentence. A similar thing seems to happen with discourses like (64):

(64) John was still unhappy. His grandmother gave him a candy, but it didn’t help.

Here still felicitously appears in a past tense sentence which is the first in the discourse. Intuitively, though, the reference time of the first sentence is nonetheless anaphoric, or more

\( (i) \) is felicitous even if the guards change regularly, as long as we have temporal continuity. Assuming that events are individualized by their participants, it would be problematic to maintain that we have one eventuality here, which overlaps both the speech time and a time prior to it, as done in this paper. Notice, however, that a similar problem is raised by still-less sentences as in (ii):

(ii) Between 3 and 8, there was a guard at the gate

(ii) too can be felicitous if there was one guard from 3 to 6, who was replaced by another guard from 6 to 8. But if indeed having different guards necessarily means having different eventualities, we wrongly predict that (iii) would also be felicitous in this situation, (twice seems to indicate a plurality of events, see Rothstein 2004):

(iii) Between 3 and 8, there was a guard at the gate twice.

But (iii) is infelicitous in this scenario. It can become felicitous if the two different eventualities are characterized not only by different participants, but also by temporal discontinuity. In other words, despite the changing of the participants in (ii), it seems to talk about one eventuality, namely one where there was some guard or another at the gate. It seems to me that the same thing happens in (i).

It is, of course, challenging to understand this pattern, but this is beyond the scope of the present paper. One possible direction is that what we have here is the necessary summing of two eventualities into a single one (what Rothstein 2004 calls S-summing).
precisely cataphoric: it is supplied by the eventuality time of the second sentence. This is very similar to cataphora in the nominal domain, as in (65), or (66) cited in Geurts 1999:

(65) When he saw me, John was really surprised.
(66) The doctor kept warning him but he would never listen, and now Harry’s dead.

Geurts suggests that in cataphoric cases like (66), the reference to the pronoun him is accommodated, in a similar way to the accommodation of standard presuppositions. I assume that a similar thing happens with (64).25

The interesting point, then, is that in both (61) and (64), the reference time of the past tense sentence with still is indirectly interpreted as existential, but nonetheless, still is felicitous. Given the discussion above, the reason should be clear: Since the reference time of the sentence with still is anaphoric, or cataphoric, to another time (albeit an existential one), the use of still is informative and hence felicitous: For example, the still-less version of (61) is compatible with a situation where Mary finished taking off her clothes just as John opened the door. When the presupposition triggered by still is added, this situation is excluded.

In general, then, the precise feature which distinguishes infelicitous from felicitous uses of still in past tense sentences is not the existential/non-existential interpretation of the reference time, but rather the novel/anaphoric one.

5. Compatibility of the present analysis with current theories of presuppositions

In the sections above we developed the idea that still is infelicitous in sentences like (67B’) since in such a case the prior time presupposition can be trivially inferred from the truth of the still-less version in (67B) and hence its use is uninformative:

(67) A: How’s John ?
    B: He was unemployed
    B’: #He was still unemployed

I would like to finish this paper by examining the compatibility of this claim with current theories of presuppositions. I will focus here on three general suggestions which may be seen as raising problems for the analysis above.

First, a general assumption in the literature, e.g. Stalnaker 1978, is that presuppositions are supposed to be trivial (relative to the common ground). It is unclear, then, why the triviality

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25 The difference is that in (64), we accommodate a time, not an individual, and that the co-referring expression is not definite or a proper name, but existentially closed, namely the existentially closed eventuality time of the second sentence.
of the presupposition in (67B’) leads to infelicity. This may be seen as all the more problematic in view of the recent literature that claims that certain presupposition triggers are obligatory whenever they are allowed (what is called Maximize Presupposition, discussed in e.g. Sauerland 2006, Percus 2006 and Schlenker 2006).

On the other hand, theories like van der Sandt 1992, Geurts 1999 or Beaver 2001 posit ‘informativity constraints’ which exclude uninformative accommodation of presuppositions. On the surface this kind of requirement may be seen as the one violated in the case in (67B’). However, the ‘Informativity constraints’ suggested in these theories are based on the Gricean maxim of quantity (according to Geurts 1999) or manner (according to Beaver & Zeevat (to appear)). As is well known, and as Geurts 1999 himself emphasizes, such maxims, and the informativity constraint based on them, are defeasible, and many times breaking them leads to some conversational implicatures. This is not what happens in (67B’): as long as the reference time is novel the uninformativity of still does not lead to a conversational implicature, but to infelicity which seems strikingly stronger than the result of typical violations of Gricean maxims. If a Gricean-based informativity constraint is indeed the one violated in (67B’), then the hopeless infelicity of such sentences is unexplained.

A closer look, however, shows that none of these suggestions actually covers cases like (67B’), so these potential problems do not arise in the first place.

First, though it is true that presuppositions are trivial given the common ground, this is not what the analysis above suggests with respect to cases like (67B’). Instead, the ‘prior time’ presupposition in such a sentence can be trivially inferred from the truth of the still-less version in (67B), which is not part of the common ground. In fact, this still-less version is not uttered at all. It is a potential alternative to (67B’).

For a similar reason, the Gricean-based ‘Informativity constraints’ are not applicable to our case. Consider, for example, Geurts’ 1999 version of the constraint, in (68):

(68) Informativeness: ϕ_{i+1} must be informative, i.e. ϕ_{i+1} may not be entailed by ϕ_i.

In (68) S_i is a sentence uttered by a speaker, with DRSϕ_i, extended by a hearer to a DRSϕ_{i+1}. This is supposed to account for infelicity in cases where existing context entails the information conveyed in a new sentence added to this context. But as we have just seen, this is not what happens in (67B’), whose content is inferable from a potential alternative.26

Finally, though ‘Maximize Presupposition’ does deal with potential alternatives, it does not apply to (67B’)) either, for two reasons. First, the principle deals with alternatives which are

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26 In addition, unlike the kind of infelicity dealt with in van der Sandt’s and Beaver’s constraints, no subDRS is entailed by the main DRS in the infelicitous cases with still above (these have no subDRSs to start with).
triggered by lexical items, such as know-believe, the-a, both-every, child-children, ran-run (see Sauerland 2006 for more such lexical items). In contrast, in the cases discussed in this paper, only one of the alternatives contains a lexical item which triggers a presupposition, namely the version with still (e.g. “John was still unemployed”), and the second alternative is simply the same sentence without this lexical item, (namely “John was unemployed”, which itself has no presuppositions).27

In addition, the alternatives covered by ‘Maximize Presupposition’ are characterized as having an equivalent assertive component (in the relevant context), but as forming a presupposition scale, i.e. one has a stronger presupposition than the other. In such a case the principle dictates that one chooses the lexical item with the strongest presupposition.28 In contrast, although indeed both the still and the still-less versions in (67) have the same assertive component, they actually do not differ in their presuppositional strength. This can be seen clearly if we adopt Schlenker’s 2006 characterization of presuppositional strength as a subset relation between the sets of worlds where the proposition is neither true nor false. Crucially, in our case the set of worlds where (67B) (“John was unemployed”) and (67B’) (“John was still unemployed”) are neither true nor false is, in fact, equal: The set of worlds where the still-less version is neither true nor false is empty, since this sentence carry no presupposition at all29 (If there is a past interval which overlaps a John-unemployed state this sentence is true, and if there isn’t such an interval the sentence is false). Crucially, though, the same holds for the version with still: as long as there is a past interval which overlaps a John-unemployed state both the assertion and the presuppositions are true, since, as we have shown above, in such a case it is true that such an interval exists, and it is true that there exists an interval prior to it, which also overlaps such a state. If, on the other hand, no past interval overlapping an unemployed state exists, the sentence is simply false. Put in other words, despite the presence of still in the sentence, in such past tense sentences there is no truth value gap at all. Thus none of the alternatives here carries a stronger presupposition.

27 The fact that the principle does not seem to apply to such alternatives (with and without still) can be seen from the fact that still in the present tense (i) is not obligatory, even if the speaker knows that John was unemployed before now as well:

(i) How’s John?
He is (still) unemployed.

28 How exactly to define presuppositional strength is not completely agreed upon. Schlenker takes F to carry a stronger presupposition than F’ just in case: \{w ∈ W: F is neither true^{w} nor false^{w} in w\} ⊂ \{w ∈ W: F’ is neither true^{w} nor false^{w} in w\}. But see Sauerland 2008 for several other versions, especially meant to ensure that the principle gives the right results also when the relevant lexical items are found in embedded structures. See also Percus 2006 concerning this issue.

29 Ignoring the presupposition that John exists (which is, of course, triggered in the still version as well).
This discussion has two important implications. The first is that the Maximize Presupposition principle is not supposed to apply to cases as in (67). Thus, the fact that *still* is not obligatory in such sentences is not a problem. Second, the fact that the infelicity of *still* in such sentences is so strong is perhaps due to the fact that *still* turns out, in fact, to be *doubly* uninformative in (67B’), namely uninformative both with respect to the content and to the status of the ‘prior time’ claim: Not only the content of the claim can be inferred from the *still*-less version, *still* does not even add the information that the status of this claim is presuppositional.

### 6. Summary and directions for further research

The goal of this paper was to explain so far unnoted and unanalyzed infelicitous occurrences of aspectual *still*. I showed that when *still* appears in past tense sentences whose reference time is novel and non-anaphoric, the truth of the assertion and that of the ‘prior time’ presupposition this particle triggers can be both inferred from the truth of the minimally contrasting *still*-less counterpart. Moreover, in such cases the presuppositional status of the ‘prior time’ claim is lost, despite the presence of *still*. Hence the use of *still* in such sentences is uninformative, and thus unjustified and infelicitous.

Besides the analysis of the novel data, the paper has several more general implications. First, as far as the semantics of *still* is concerned, the data analyzed here supports Ippolito’s 2007 claim that the assertion and presupposition of *still* make use of one eventuality argument, but in contrast to Ippolito’s theory, suggests that this eventuality argument need not be contextually salient. Second, the analysis has implications for the research of the tense and temporal structure of clauses. I claimed that the interaction of *still* with frame adverbials supports the view that they denote intervals identical to the reference time of the sentence, rather than including it. I also argued that the contrast between felicitous and infelicitous cases of *still* can only be explained if, contrary to many current analyses, we assume that past tense is not necessarily anaphoric, but can be represented as a new variable bound by existential closure. In fact, given the analysis above, the felicity or infelicity of *still* in past tense sentences can be seen as a diagnostic for determining whether or not the reference time in such sentences is anaphoric or not.

The analysis above raises several open questions. For example, above we concentrated on explaining the behavior of *still* in matrix positive sentences. An obvious extension of the
theory is to try and check whether the contrast between the occurrence of still with novel and familiar reference times, and the informativity-based explanation of this contrast, can be carried over to other, more complex structures. Although this step is beyond the scope of the present analysis, I would like to finish the paper by examining one such construction, namely negative sentences.

At least on the surface, the behavior of still in negative sentences seems to pose a problem for the analysis above.30 Presuppositions are known to project out of the scope of negation. Assuming the informativity-based proposal suggested above, then, one would predict that negative sentences with still will be felicitous even if their reference time is novel, since the problem of uninformativity seen before should not arise here: Unlike the 'positive' sentences above, in such sentences the presupposition, which remains 'positive', would not be able to be inferred from the truth of the negated still-less assertion. The prediction seems to be, then, that, existential past tense negative sentences with still should be felicitous, unlike their positive counterparts. Is this prediction borne out?

There is an obvious complication with answering this question: still has been known for a long time to be a positive polarity item, i.e. to be odd under the scope of negation (see e.g. Baker 1970, Israel 1996, 1997, Szabolcsi 2004). Thus, the fact that still is infelicitous in the past tense (69a) should not be attributed to the novelty of the reference time in this sentence, since it is just as infelicitous in the present tense (69b), with a familiar reference time:

(69)  (How’s John ?)
   a. He wasn’t (#still) unemployed
   b. He isn’t (#still) unemployed

However, there are some kinds of negative sentences which do allow the presence of still. An example is the extra-clausal negation “it isn’t true that”. Crucially, though, this holds for the present tense version only (as in (70b)). The past tense (70a) seems as infelicitous as its positive counterpart in (67B’) above:

(70)  (How’s John ?)
   a. Well, It isn’t true that he was (#still) unemployed
   b. Well, it isn’t true that he is (still) unemployed

Put in other words, we find here exactly the same kind of contrast between sentences with familiar and novel reference times as we found in positive sentences. Given that

30 Thanks to a reviewer for pointing out this potential problem to me.
presuppositions are known to scope out of negation, this contrast may be seen as a problem for the informativity-based proposal developed above.

There is, however, a potential solution to this problem. A typical conversational use of extra-clausal negation, as in (70), is to express denial, or contrast with a contextually salient positive counterpart. If I utter the *still* version of (70b), for example, I seem to deny a contextually salient alternative saying that John *is* still unemployed. The infelicity of *still* in the negated (70a), then, could arise because negation indicates the existence of an infelicitous salient *positive* counterpart in the context, namely “#John was still unemployed”.

This kind of solution is supported by an old observation by Baker 1970, who notes that many positive polarity items (like *already*, *would rather* or the adverb *pretty*), which normally cannot occur under the scope of negation, become much better “when they represent, word by word, an emphatic denial of a preceding speaker’s assertion’ (p.169). Thus, for example, whereas (71b) is odd in the null context, it is felicitous when understood as an emphatic denial of (71a):

(71)  a. The sox have already clinched the pennant
     b. The sox haven’t already clinched the pennant

Although (70a) differs from (71b) in that it does not deny the preceding utterance (since it is an answer to a question), we can still assume that the use of the extra-clausal “it isn’t true that…” indicates denial of a contextually salient positive counterpart as well.31

If this is indeed the reason for the infelicity of *still* in the past tense (70a), we would expect that this kind of contrast in other cases where we get denial of an infelicitous positive counterpart with *still*. One possible candidate is predicate negation with heavy contrastive stress, as in (72):

(72)  (How’s John ?)
     He ISn’t (still) unemployed !

The stress pattern here seems again to express denial of a positive counterpart. A similar claim is made by Horn 1989 and Szabolcsi 2004 with respect to the PPI *someone*. Like *still, someone* is odd with normal negation (as in (73)), but fine if negation “is construed as an emphatic denial of a similarly phrased statement” (p. 413), as in (74):

(73)  He didn’t fine #something / anything.
(74)  He found something.
     Wrong! He DIDn’t / DID NOT find something. [Szabolcsi 2004, p. 413]

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31 Horn 1989 takes the cleft construction “It’s not that…” which is very similar to the “it is not the case that…” construction in (70) to be one of the typical ways to express meta-linguistic, or ‘contradiction’ negation
We could predict, then, that as long as *still* appears with contrastive stress on negation, it would be infelicitous in the past tense, just as in positive sentences. This prediction is borne out, (75) seems worse than the present tense (72): 32

(75) (How’s John ?)
    He WASn’t (#still) unemployed!

Notice, however, that it is not clear whether and how this kind of explanation can be carried over the behavior of *still* in other types of negative sentences, as in e.g. (76):

(76) a. I doubt that John is / #was still unemployed
    b. None of my friends is / #was still unemployed
    c. Every boy who isn’t / #wasn’t still sick can join the trip to the mountains

In such sentences too we find the present tense / past tense contrast found with matrix positive sentences, above. It may be possible to use again the ‘conversational’ explanation for the infelicity of the past tense version of (76a), namely to claim that ‘I doubt that John was still unemployed” is infelicitous since the use of *doubt that p* indicates that *p* (in our case the infelicitous “John was still unemployed”) is contextually salient. However, this kind of explanation does not seem to be carried over to the infelicity of the past tense versions of (76b) and (76c).

I believe, though, that in order to understand better the behavior of *still* in such sentences one first has to understand better the interaction of the focus sensitivity properties of

32 A reviewer expressed the worry that assuming this kind of argument might lead one to wrongly predict that sentences like (ia) and (ib) should be unacceptable because their positive counterparts, namely (iia) and (iib) are ungrammatical:

(i) a. John didn’t see any bird
    b. John hasn’t ever arrived

(ii) a. *John saw any bird
    b. *John has ever arrived

However, as noted above, regular predicate negation, as in (i), is not (necessarily at least) taken to express denial of a salient positive proposition. It is expressions like “It is not true that…” or focused negation which typically have this conversational role. That is, we need instead to check the felicity of sentences as in (iii) and (iv). Indeed, these are not as good as those in (i):

(iii) a. # It is not true that John saw any bird
    b. # / ?It is not true that John has ever arrived

(iv) a. #John DIDn’t see any bird!
    b. #/ ?John HASn’t ever arrived!

This contrast is very similar to the well known observation (e.g. Karttunen & Peters 1979, Horn 1989) that what they sometimes call ‘contradiction negation’ (or metalinguistic negation) cannot license negative polarity items as in (v), from Karttunen & Peters:

(v) Chris didn’t MANAGE to solve some / *any problem. He solved them easily

The exact explanation for this pattern is under debate (see e.g. Horn 1989 for an overview). Thus, it is not clear that the reason for the oddness of NPIs with ‘contradiction negation’ is the indication of an existing infelicitous positive counterpart (as suggested above for the oddness of *still* in (70a)), or the fact that this kind of ‘meta linguistic negation’ cannot count as a licensor for NPIs for semantic or syntactic reasons (see e.g. Linebarger 1987). But in any case, it seems that the felicity of the NPIs with predicate negation in (i) does not seem to undermine the ‘conversational’ kind of explanation for the infelicity of *still* with the cases of ‘contradition negation’ above.
still with different types of ‘negative’ sentences. Szabolsci 2004 shows that the PPI someone interacts in a rather complicated way with various types of ‘negative’ operator (e.g. antimorphic, anti additive and monotone decreasing operators, in van der Wooden 1997 terminology), both in terms of distribution and interpretation. As far as I know no similar work has been done on the PPI still. It may very well turn out that the polarity sensitivity properties of still, and consequently its distribution and interpretation with various ‘negative’ operators, are even different from that of someone (just as in the realm of NPIs, not all PPIs are equivalent). Further research, then, should first attempt to characterize these properties with familiar reference times (e.g. in present tense). Only then can one start evaluating whether the incompatibility of still with past tense, as in (76), and in other embedded constructions, does, or does not constitute a real problem for the informativity-based analysis developed above.

In addition, further research should also check whether the infelicity of still discussed above is part of a larger pattern of uninformative uses of presuppositions triggers (like already or anymore) or particles in general. Finally, the interaction of still with other tenses and aspects (e.g. future tense, and perfect aspect) should be compared to its interaction with the simple past.

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33 One parallel which comes to mind is suggested in Chierchia 2006. Similarly to the kind of argumentation proposed above, Chierchia argues that the ungrammaticality of NPIs like any in positive sentences (as in *I saw any student*) is due to the fact that the main contribution of any is domain widening, which, in positive sentences is “purposeless” and uninformative. Chierchia, however, is well aware of the fact that this intuitive explanation is not enough since it is not clear “why pragmatically driven conditions, which usually can be overridden, give rise…to unsavable grammaticality contrasts” (p. 538). The paper attempts to answer this question by using Chierchia’s Recursive Pragmatics approach. Further research should check whether this kind of formal framework can be used to explain the infelicitous case of still as well.
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