Non-Factual Before as an Exceptional Construction*

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The notion that non-factual before is an exceptional construction is explored. It is shown that this explanation is consistent with observed behavior. A formal analysis designed for exceptional constructions is reinterpreted as an analysis of non-factual before. Non-factual interpretations associated with other temporal expressions are also noted.

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1. Introduction

The non-factual (or non-veridical) reading of before-clauses has been discussed by Lakoff (1970), Heinämäki (1972, 1974), Landman (1991), Ogihara (1995), Beaver and Condoravdi (2003), Valencia, van der Wouden, and Zwarts (2003), and others. Consider (1a,b).

(1a) Before Smith crossed the minefield, he ate a sandwich.
(1b) Before Smith crossed the minefield, he stepped on a mine.

Under a plausible interpretation of (1a), first Smith ate a sandwich and then he crossed the minefield or, if he ate the sandwich while crossing, he finished eating it before he reached the other side. This is consistent with the

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interpretation of *before* as a fairly straightforward indicator of temporal precedence (See Anscombe, 1964 for details). By contrast, under one plausible interpretation of (1b), Smith never crossed the minefield because at some time during his journey, he stepped on a mine, which stopped him. Thus, despite the fact that (1b) contains the clause *Smith crossed the minefield*, (1b) is compatible with the interpretation that Smith did not cross. As we see, *before* can signal a non-factual reading in which the *before*-clause is understood as counterfactual (i.e., Smith did not cross).

There is thus the matter of providing a formal analysis for non-factual *before*, but this goal would be aided if we could better explain the origin of the non-factual reading. After all, why would (1b) not instead be expressed as *Before Smith didn’t cross the minefield, he stepped on a mine*, if indeed Smith did not cross? Formal accounts, including those noted above, have been advanced, but more can still be said about why and how the non-factual reading arises with *before*. This more general question is one that may be approached under cognitive science, which can then inform the semantic analysis.

2. Using *Before* to Mark an Exceptive

We may investigate a number of clues concerning the nature of non-factual *before* that hint at how language users understand this construction. Consider that exceptive constructions in English can set up patterns somewhat reminiscent of (1a, b), as in (2a, b).

(2a) Every student attended the meeting, except that John didn’t enjoy it.
(2b) Every student attended the meeting, except that John was sick.

Under a plausible interpretation of (2a), every student did indeed attend the meeting. By contrast, under a plausible interpretation of (2b), John was sick and therefore, one might conclude, was absent, so every student did not attend the meeting. The exception could be stated more directly in (2b) with … *except that John was absent*. Despite the fact that (2b) contains the clause *Every student attended the meeting*, (2b) is compatible with the interpretation that every student did not attend.
One way of looking at this is that a clause introduced by *except that* can associate the clause to which it is attached with one sort of non-factual interpretation. One obvious contrast is that if *before* signals an exception, the non-factual interpretation is associated not with the clause to which the *before*-clause attaches, but rather with the *before*-clause itself, as is confirmed by comparing the placement of non-factual clauses in (1b) and (2b). That is, if it would be feasible to understand the main clause as expressing an exception to the *before*-clause, this would be one way that a non-factual interpretation of the *before*-clause could arise. Consider (3a, b).

(3a) Turn back before you step on any of the mines!
(3b) Turn back lest you step on any of the mines!

Use of *before* in (3a) is non-factual in that (3a) plausibly does not advocate first turning back and then later stepping on a deadly mine, but rather avoiding stepping on any mine. In such uses, the parallel sentence with the somewhat antiquated expression *lest*, as in (3b), seems an accurate paraphrase.

Incidentally, note that (3a, b) both license use of the negative polarity item NPI *any*. The use of NPIs with *before* has been a topic of considerable interest in the literature, but as Heinämäki (1974) and others have noted, NPIs also appear in *before*-clauses that have a factual interpretation. Thus, although a worthy topic of study in its own right, I do not find the appearance of NPIs with *before* to be particularly useful in discovering the origin of the non-factual reading of *before*.

The *Oxford English Dictionary* describes *lest* as ‘a negative particle of intention or purpose, introducing a clause expressive of something to be prevented or guarded against’; the word derives from the Old English phrase *þy læs þe*, which literally meant ‘whereby less’, equivalent to the Latin expression *quōminus* (Lest). As we see from the English word less and the Latin *minus*, we have in *lest* an expression that almost explicitly describes the notion of subtraction. Insofar as the *before*-clause example in (3a) seems to be truth-conditionally synonymous to the *lest*-clause example in (3b), we may suspect that non-factual *before* may also communicate such a subtractive notion.

To clarify, that is not to say that *lest* and non-factual *before* are entirely
synonymous or even that they function in an entirely parallel fashion. For example, note that a *lest*-clause is typically in the subjunctive (e.g., *Stop lest he injure you*), whereas non-factual *before* can somehow paraphrase *lest* but with an indicative verb (e.g., *Stop before he injures you*). The parallel I have in mind is that each in their own ways seem to communicate a similar sort of subtractive (or exceptive) notion.

We may also compare (4a) and (4b).

(4a) Smith crossed the minefield unless he stepped on a mine.
(4b) Smith stepped on a mine before he crossed the minefield.

I am not claiming that (4a) and (4b) are paraphrases of one another. Rather, I am suggesting that *unless* and *before* could both serve as exception-marking expressions that, in their own distinct ways, could potentially attach a negated interpretation to the affirmative clause *Smith (he) crossed the minefield*. Significantly, in every analysis of *unless* surveyed in Declerck & Reed (2000), the *unless*-clause is analyzed as negating or expressing an exception to the clause to which it attaches.

Von Fintel (1991, 136) states that ‘… *unless* is a subtractive or exceptive operator on quantifier domains’. Concerning the etymology of *unless*, von Fintel (1991, 136) indicates that ‘… the apparent negative prefix *un-* in *unless* is not really there. The Oxford English Dictionary states that *unless* was formed from the adjective *less* and the preposition *on* which ‘by want of stress’ turned into the prefix *un-*’. Thus, the parallels between (4a) and (4b) likewise influence us to consider *before*-clauses as perhaps deserving of a similar analysis.

Note that in both (4a) and (4b), the exception is stated indirectly. That is, the exception *Smith (he) stepped on a mine* is literally about Smith’s stepping and says nothing explicit about Smith’s crossing or not crossing. It is up to the language user to conclude that Smith’s stepping on a mine contradicts the notion that he crossed the minefield in a way that his eating a sandwich would not. Note that the *before*-clauses in (1a) and (1b) are identical, so the non-factual interpretation in (1b) must somehow be introduced via its coexistence with the clause *he stepped on a mine* rather than with the clause *he ate a sandwich*. 
Lakoff (1970:240) treats this contrast as a cancellation of a presupposition that takes place under conditions ‘... which aren’t completely understood’. That is, (1a) presupposes *Smith crossed the minefield*, whereas in (1b), the presupposition *Smith crossed the minefield* no longer arises.

Note that the contrasting factual and non-factual readings we find associated with a *before*-clause do not arise due to vagueness. An example of a vague assertion is *I bought a dog*, in which the meaning of *dog* is broad enough to encompass the purchase of a poodle, Chihuahua, mutt, or another type of dog, as the case may be. Yet, the clause *he crossed the minefield* is not similarly vague. This clause in the indicative does not in isolation encompass both situations where he crossed the minefield and situations where he did not. Be that as it may, under one interpretation of (1b), we can still somehow conclude that he did not.

Note also that from (2b) we conclude that *every student attended the meeting* is false, but this does not follow simply from the cancellation of a presupposition, although certainly one might say that this presupposition exists and is then cancelled by the exceptive. This clause in the indicative occurs together with an exceptive, and it is the presence of this exceptive that leads us to conclude that, considered in isolation, *every student attended the meeting* is false. Similar considerations could apply to (1b). In other words, the presence of an exceptive construction could be regarded as the condition that leads to the presupposition cancellation noted by Lakoff (1970).

Observe what can occur in pragmatics as the result of a deliberate assertion of a logical contradiction. Note that (5a) and (5b) are contradictions.

(5a) John is a lawyer, and he isn’t.
(5b) The chair is in the room, and it isn’t.

Consider how these contradictions might be used conversationally. First of all, we would plausibly not use them to express the literal contradictions that John is simultaneously a lawyer and not or that the chair exists simultaneously in two distinct locations, respectively. Rather, (5a) can be a shorthand way to express such notions as *John is a lawyer, except that he does not practice* or *John is a lawyer, except that he has been disbarred*. That is, in a circumstance where (5a) might be stated, it would not be fully true to assert *John is a lawyer*
flatly. Likewise, (5b) might be used to describe a circumstance in which a chair is positioned just inside the door to a room, except that one of the legs is outside the room. In such a scenario, stating *The chair is in the room* with no further qualification would not be entirely truthful, and would therefore be false, strictly speaking.

Now consider (2b). The clause *John was sick* can be taken to mean that his sickness caused him to be absent. If so interpreted, the exception clause contradicts *Every student attended the meeting*. As with (5a) and (5b), these contradictory assertions can only coexist felicitously in the same sentence because one is taken to express an exception to the other, as made explicit with the words *except that*. Compare this with (1b). The clause *he stepped on a mine* can mean that this event caused him to stop in the middle of the minefield. If so interpreted, this clause contradicts *Smith crossed the minefield*. We may thus suspect that the contradictory nature of the clauses in (1b) influence this sentence to be interpreted as expressing an exception, and that this is none other than the origin of the non-factual reading of *before*.

Given the above discussion, there seem to be clues that *before* can signal an exception. With this in mind, the feasibility of a formal analysis for semantics can be explored. Our basic guidance is that *before* is to be treated as a potential exception-forming construction.

### 3. A Compositional Analysis of *Before*

Let us consider the classic compositional account of *before* from Anscombe (1964). For ease of presentation, I use the examples and notation from the discussion of Anscombe (1964) found in Ogihara (1995). Anscombe (1964) was concerned with sentences similar to (6a-d):

(6a) The Parthenon was there before St. Peter’s was there.
(6b) St. Peter’s was there before the Parthenon was there.
(6c) St. Peter’s was there after the Parthenon was there.
(6d) The Parthenon was there after St. Peter’s was there.

Assume the following order of events: 1. The Parthenon is built; 2. St. Peter’s is built; 3. St. Peter’s is destroyed; 4. The Parthenon is destroyed. In this
scenario, (6c) and (6d) could both be true, but (6a) and (6b) could not both be true.

To address the contrast between before-clauses and after-clauses, Anscombe proposes the analysis in (7) of sentences of the form $p$ before $q$ (again from Ogihara 1995):

(7) A sentence of the form $p$ before $q$, where $p$ and $q$ are sentences in the past tense, is true iff the following condition holds:

$$\exists t \left[ t < \text{now} \land p' \text{ is true at } t \land \forall t' \left[ t' < now \land q' \text{ is true at } t' \rightarrow t < t' \right] \right],$$

where $p'$ and $q'$ are tenseless forms of $p$ and $q$, respectively.

The analysis in (7) addresses the before/after contrast in (6a-d) and has also conveniently provided other scholars, such as Heinämäki (1972, 1974) and Landman (1991), with a way to deal with non-factual before.

We may consider an example to demonstrate this. As Ogihara (1995) notes, assuming existential quantification over times for all clauses, (8a) could portray the meaning of (8b), but not (8c), where (8c) is understood under a non-factual interpretation of the before-clause.

(8a) $\exists t \left[ t < \text{now} \land \text{John dies at } t \land \exists t' \left[ t' < \text{now} \land \text{John sees his grandchildren at } t' \right] \right]$

(8b) John saw his grandchildren after he died.

(8c) John died before he saw his grandchildren.

As Ogihara (1995) observes, (8c) does not mean the same as (8b), which is the meaning portrayed in the formula in (8a). Rather, (8c) seems to mean that John died before he had the opportunity to see his grandchildren.

But note what happens when we analyze (8c) via Anscombe's formula in (7), as shown in (9):

(9) $\exists t \left[ t < \text{now} \land \text{John dies is true at } t \land \forall t' \left[ t' < \text{now} \land \text{John sees his grandchildren is true at } t' \rightarrow t < t' \right] \right]$

If John dies before he somehow factually sees (perhaps as a ghost) his
grandchildren, the formula in (9) is true. However, if John dies and never sees his grandchildren at all, the formula in (9) is again true. It is evaluated vacuously as true because the left side of the implication is false. A number of accounts of non-factual *before* have relied on this logical outcome of Anscombe’s formula to explain the acceptability of the non-factual *before* reading.

However, there is another way that the apparent non-factual interpretation of *before* might be understood. Consider the analysis of (8c) in (10):

$$
\begin{align*}
\exists t & \left[ t < \text{now} \land \text{John dies} \right] \\
\exists t' & \left[ t' < \text{now} \land \text{John sees his grandchildren} \right] \\
\forall t'' & \left[ \left[ t'' < \text{now} \land \text{John sees his grandchildren} \right] \rightarrow t < t'' \right] \\
\end{align*}
$$

The extra line added to this formula ensures that (10) will come out false if there is no past event of John seeing his grandchildren. That is, (8c) is evaluated as false, assuming John does not somehow see his grandchildren after his own death, perhaps as a ghost.

As Heinämäki (1972, 1974), Ogihara (1995), and others have emphasized, the factual reading of a *before*-clause is assumed unless the sentence is taken to assert a paradox. Only in this case does the non-factual reading come forward.

I see no reason why the mechanism behind the surfacing of this non-factual interpretation must be inherent to the compositional semantics of *before*. Perhaps the very paradoxical situation that (10) depicts could prompt a pragmatic reinterpretation of *before* as an exceptive marker, as with the contradictions in (5a, b). Thus, if the two clauses of a sentence of the form $p$ *before* $q$ are contradictory, it may be feasible to regard them as a species of exceptive construction, similar to (2b), which is also noteworthy for having contradictory components.

4. A Challenge for the Standard View

I believe this exceptive-based strategy is not only an interesting alternative to the standard treatment of non-factual *before*, but also seems to account better for certain examples. To cite just one, Ogihara (1995) discusses the sentence in (11).
The Namibian boy died of starvation before he became the president of the United States.

As Ogihara (1995) indicates, the logic in (7) that unifies the truth of factual and non-factual interpretations faces a challenge explaining why (11) would be false or regarded as anomalous. This is because the value of (7) is specifically that it allows for the before clause to be false, but the overall sentence to be true. Parallel to (8c), suppose the boy did die and that the before-clause in (11) is also (obviously) false. Why would not the overall sentence in (11) be true, parallel to the evaluation of (8c) as true? This is certainly a complication for any standard account that relies on the logic in (7).

However, in this exception-based account depicted in (10), given that the Namibian boy did not become president of the United States, the overall sentence (11) is just false. If the before-clause is false and the overall sentence is false as a result, we may then force an interpretation of (11) as expressing an exception, which involves a sentence that includes contradictory clauses, as has been shown in (2b) and (5a,b).

By forcing this exceptive interpretation, it is immediately clear why use of (11) is excluded pragmatically. We could not assert that except for the fact of his starvation, this Namibian boy becomes the president. An exception-based solution works whereas the standard logic in (7) would at minimum have some troubles. I believe this is a non-trivial challenge for the standard account.

5. One Formal Analysis of Exceptives

The semantic literature on exceptives is extensive, but it may suffice just to discuss the treatment of von Fintel (1993) here briefly, in which examples such as those in (12a) and (12b) are analyzed.

(12a) Every student but John attended the meeting.
(12b) Except for John, every student attended the meeting.

The set-theoretic formalism from von Fintel is a bit dense, but manageable. Von Fintel argues that the but-phrase exceptive in (12a) should be analyzed as in (13).
The statement $P \left[ D \left( A - C \right) \right]$ is a Domain Subtraction clause, indicating that the set of those who attended the meeting is an element of the set of sets $D \left( A - C \right)$, which is the set of all sets that have every student other than John as elements. The statement $> \{ S \mid P \left[ D \left( A - S \right) \right] \} = C$ is the Uniqueness Condition, indicating a requirement for every exception set $S$. If the set of those who attended the meeting is an element of the set of sets $D \left( A - S \right)$, which is the set of all sets that have every student besides those in the exception set $S$ as elements and that does not have the elements in the exception set $S$ as elements, then this exception set is none other than $C$.

As von Fintel (1993, 130) clarifies, ‘The Domain Subtraction clause says that $C$ contains all the exceptions, while the Uniqueness Condition says that $C$ contains only exceptions. In sum, a but-phrase names the set responsible for the falsehood of a quantified statement’. Von Fintel therefore indicates that Every student but John attended the meeting entails It is not the case that every student attended the meeting. This is because John (and John alone) was absent. Stated another way, if the exceptive sentence in (12a) is true, then Every student attended the meeting is false, due only to John’s absence.

Von Fintel argues that the free exceptive example in (12b) is analyzed with a somewhat weaker semantics. I do not provide an overview of this treatment here because von Fintel (1993, 138) goes on to argue, ‘The weakness of the lexical meaning of free exceptives does not preclude pragmatic strengthenings of that meaning. With universal determiners, the maximally relevant reading will still be the one where the exception stated is the unique smallest one’. That is, in cases involving universal quantification, as a result of pragmatic strengthening, a free exceptive, such as (12b), can likewise receive a stronger interpretation, which is identical to the interpretation of (12a), as described in (13). It is to just such examples that I restrict my discussion, so (13) represents the ‘maximally relevant’ semantics for the examples I examine.
Now consider the indirectly stated exception in (14).

(14) Every student attended the meeting, except that John was sick.

A common interpretation for (14) would be that John is a student and that his sickness caused him to miss the meeting, so that his absence constitutes a genuine exception to the statement that every student attended. In this way, the analysis in (13) could also describe the maximally relevant reading for (14), replicating the stronger semantics associated with a \textit{but}-phrase exceptive, though this interpretation would be arrived at indirectly.

To summarize, it would be plausible to conclude from an assertion of (14) that John’s sickness caused him to be absent. In addition, based on von Fintel’s analysis, it would be plausible to conclude that John was the only one absent. Lastly, \textit{John was sick} (and, thus, absent) names the sole exception responsible for the falsehood of the clause \textit{Every student attended the meeting}.

We may now consider how we might rework von Fintel’s analysis from (13) to provide a formal treatment of the sentence (4b) Smith stepped on a mine before he crossed the minefield.

\section*{6. Reworking the Analysis for Non-Factual \textit{Before}}

We can think of (4b) as a sentence much like (14), which indicates the presence of an exception, but only indirectly. In this case, for A, we are dealing with actual event stages of Smith’s attempted minefield crossing $e$ instead of students who were in attendance at the meeting. For P, we have event stages of $e_1$, which is a successful minefield crossing by Smith, instead of students who should all have been in attendance at the meeting. We must consider the crucial final event stages of the successful crossing in $e_1$ that are absent from the failed attempt in $e$. This is analogous to John being an absent student from the meeting. This analysis is shown in (15).

(15) $D = \llbracket \text{every} \rrbracket$

$A = \llbracket \text{stage of the event } e_1 \rrbracket$

$C = \llbracket \text{stage of the event } e_1 \rrbracket > \llbracket \text{ stage of the event } e \rrbracket$

$P = \llbracket \text{stage of the event } e \rrbracket$
D A [[but]] C P = True ⇔ P [ D (A — C) &> {S | P [D (A — S)} = C

P [D (A — C)] indicates that the set of the stages of the event e is an element of the set of sets D (A — C), which is the set of all sets that have every stage of the event e, other than those late stages of e, that are not stages of the event e, as elements. > { S | P [D (A — S)} = C indicates that if the set of the stages of the event e is an element of the set of sets D (A — S), which is the set of all sets that have every stage of the event e besides those in the exception set S as elements and that does not have the elements in the exception set S as elements, then this exception set is none other than C.

To summarize (15), the remaining ground not covered by Smith in those absent event stages is responsible for the falsehood of Smith crossed the minefield. These event stages are not named explicitly in (4b), but are indirectly noted by describing Smith’s mishap with a mine. This is analogous to John’s sickness in (14) indirectly implying his absence from the meeting. Under this assumption, if the exception Smith stepped on a mine from (4b) is true, then Smith crossed the minefield can be analyzed as false, in correspondence with the analysis in (15).

Incidentally, the description of the exception set C in (15) is not ideal, since it only defines C as whatever might be missing. In practice, this set would instead specifically have as an element the culmination stage plus perhaps additional specific missing stages leading up to the culmination. There are also a number of considerations of pragmatics, such how large an exception may be felicitously stated, but these are considerations that impact the felicitous use of exceptions generally, not just this description of non-factual before as an exceptive construction.

The fundamental point from the above discussion is that there is a strategy for analyzing non-factual before as an exceptive in formal terms that parallels a widely used analysis of other exceptive constructions.

7. Related Phenomena

There are a number of additional facts to consider that relate to the nature of the non-factual reading of before and that provide insight as to how it is that an
exceptive interpretation occurs. For example, as indicated to me by one of the anonymous reviewers of this paper, the parallel between the examples in (16a) and (16b) can be used to demonstrate the origins of the non-factual reading clearly.

(16a) John died before he built his dream house.
(16b) John was going to build his dream house, except that he died (prematurely).

(16a) is an example of non-factual before. (16b) is a sentence that includes a clausal exceptive. That (16a) and (16b) can paraphrase one another quite closely is again suggestive that (16a) contains some form of exceptive construction.

Of course, in order to address a sentence such as (16a), we need to deal with an exception that does not simply remove expected stages from an event, as depicted in (15), but rather that indicates that an entire event did not occur. As it so happens, von Fintel’s analysis of exceptives has already been applied in von Fintel (1991) to deal with exception sentences such as (17).

(17) I will leave unless Bill calls soon.

As has been noted, von Fintel (1991, 136) identifies unless as an exception-forming construction and claims, ‘Its semantics [ is ] essentially parallel to that of the exceptive but as in … Every student but John was present’. Von Fintel (1991, 143) summarizes the example in (17) as ‘All of the minimal situations in the set of currently relevant situations except the ones in which Bill calls soon are part of a larger situation in which I leave. (modulo modality and tense)’.

I have already indicated a parallel between the exceptive unless and use of non-factual before in (4a-b). Thus, an example such as (16a) seems amenable to a treatment analogous to that of unless from von Fintel (1991) or a similar analysis. In short, considering (16a), situations in which John builds his dream house would not include any situations in which John dies earlier.

I do not explicate an account here in further detail, since my present aim is not to defend rigorously some particular treatment of exceptives generally, but
rather just to argue for the plausibility of the idea that non-factual *before* indeed expresses an exceptive and that a satisfactory analysis of this construction should proceed along the lines of treating it as a sort of exceptive. This aim, I believe, has been supported by considerations outlined in this paper.

Considering (17), a plan or possibility for John to build his dream house existed in the past. It is therefore plausible to claim that John would have realized the construction of his dream house, except that he died, so that John’s plan was prevented from being realized. By contrast, we may consider a reinterpretation of (11) as (18).

\[18\] The Namibian boy was going to be president of the United States, but he died of starvation.

For the same reason that the original sentence in (11) is unacceptable as an exceptive, so too is this reinterpretation. We do not regard the boy’s death as the only exceptional circumstance preventing him from having become the president of the United States, but both (11) and (18) make this claim. We thus have a plausible reason why both (11) and (18) would typically be infelicitous.

We have already seen parallels between the behavior of non-factual *before* and the expressions *unless* and *lest*. Consider further that if *before* can indeed be used to signal an exception, this could also help explain how other temporal expressions, such as *until*, *after*, and *when*, can also potentially involve non-factual interpretations, as shown in (19a-c).

\[19a\] I took photos of the Eiffel Tower, until I realized there was no film in the camera.

\[19b\] After Robert purchased a copy of Wuthering Heights, he discovered it was actually a book on dinosaurs with the wrong dust jacket.

\[19c\] John was jogging when he fell.

In (19a), I did not in fact take any photos of the Eiffel Tower, despite stating the clause *I took photos of the Eiffel Tower*. In (19b), Robert did not purchase a copy of *Wuthering Heights*. In (19c), John was not in fact jogging when he fell, but was rather literally falling when he fell. It is indeed a contradiction to be jogging and falling simultaneously, yet (19c) contains a *when*-clause under its
simultaneous (and not sequential) interpretation. Although these examples obviously require somewhat different analyses than non-factual *before*, the idea of treating them as involving exceptions of various kinds gives us a direction for the analyses to take.

8. Conclusion

Although not proving exhaustively that non-factual *before* is indeed an exception-marking construction, I have shown that this explanation would certainly be highly consistent with its observed behavior. I argue that the non-factual reading of *before* does not arise due to vagueness. Rather, this seems to be a special reading that is forced by the need to reinterpret an assertion that would otherwise be contradictory. As with other contradictory assertions actually used in conversation, the reinterpretation here seems to be to use the construction to express an exception. I have then shown that a formal analysis designed for exceptive constructions can be reinterpreted as an analysis of non-factual *before*. As I have noted, use of other temporal expressions can also sometimes give rise to non-factual behavior of various kinds, so the general strategy of treating temporal expressions as having the potential to signal exceptions may have wider application.

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