The interplay of conversational implicature, speaker expectations, and NPI and positive *anymore* and *yet*

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Abstract

This paper accounts for the behavior of the temporal adverbs *anymore* and *yet* under the negative epistemic verb *doubt* and under a class of verbs that I term mirative emotive factives (MEFs; emotive factives conveying surprise, or a contrast between expectations and reality). I consider both the standard NPI *anymore* and *yet* and the non-standard “positive” variants available to some speakers. Previous accounts of *anymore* and *yet* ascribe their meaning to contrast or additivity, respectively, between a presupposition about the past and an assertion about the present. I show that, under *doubt*, the latter can be replaced with a conversational implicature about the present. Then, following Altshuler & Michaelis’s (2018) account of *by* temporal adverbs, I argue that the contrast between expectation and reality inherent in the meaning of MEFs can constitute the change-of-state event that is a necessary part of the meaning of *anymore*. Finally, I appeal to the presuppositions and assertions inherent in *yet* to illustrate why *anymore* and *yet* behave differently.

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In standard English, the temporal adverbs *anymore* and *yet* have traditionally been identified as negative polarity items (NPIs). Like all NPIs, they have a characteristic distribution, being licensed only under the aegis of negation and in certain other “negative-like” environments, including questions. In the case of *anymore*, this distribution is exemplified by (1)-(3) below.¹

1. Jordan doesn’t eat in the dining hall anymore.
2. Does Jordan eat in the dining hall anymore?
3. %Jordan eats in the dining hall anymore.
   ‘Jordan eats in the dining hall nowadays.’

*Yet* displays a similar pattern, seen in (4)-(6).

4. Shining isn’t at work yet.
5. Is Shining at work yet?
6. %Shining is at work yet.
   ‘Shining is still at work.’

That said, for speakers across a wide but scattered swath of regions, including the Philadelphia area, the Midwest, Appalachia, and some parts of Canada and Ireland, (3) is an acceptable sentence. Notice that (3) means that Jordan formerly did not eat in the dining hall and now does—not that she ate in the dining hall in the past and still does so, as many people assume when encountering this usage for the first time. In other words, its meaning is nearly equivalent to that of *nowadays*. This so-called “positive” *anymore*, along with its geographical distribution,

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¹ Throughout this paper, I mark my examples with the following symbols to indicate various shades of acceptability:
- * the utterance is ungrammatical for all speakers (as far as I have observed)
- # the utterance is semantically or pragmatically odd, but not necessarily ungrammatical
- % the utterance is grammatical for some speakers and ungrammatical for others
Unmarked examples are grammatical for all speakers (as far as I have observed).
sociolinguistic indicators, and, of course, its semantics, has been well-studied and revisited periodically (see Malone 1931; Carter 1932; Eitner 1949; Horn 1970, 2013; Parker 1975; Shields 1997; Maher & McCoy 2011).

Although it is not as well-documented as positive *anymore*, there also exists, for some speakers, a positive *yet,*² as seen in (6) and in the following observed examples:³

(7) It’s %(a little) early to go to the beach yet, isn’t it? The lifeguards aren’t there yet.  
   ‘It’s still (a little) early to go to the beach, isn’t it? The lifeguards aren’t there yet.

(8) %They might not have gotten the results yet or the doctor might have to look at them yet.  
   ‘They might not have gotten the results yet or the doctor might still have to look at them (= the doctor might not have looked at them yet).’

(9) %She’s too young yet.  
   ‘She’s still too young.’

(10) %We had them click on the map where they thought we should excavate yet.  
   ‘We had them click on the map where they thought we should excavate in the future (that is, among those places we still hadn’t excavated).’

As the standard English “glosses” of (6)-(10) indicate, the meaning of positive *yet* is basically equivalent to that of *still.*

² As a matter of fact, outside of its function as a temporal adverb, *yet* has a number of uses (some of which sound a bit archaic to modern ears) that do not require a negative or negative-like environment:

   He knows I’m right, yet he refuses to listen!
   We may graduate yet.
   I have yet to encounter a deer that would not chase after anyone wearing a polka-dot shirt.

While these other *yet s* are interesting in and of themselves and may be related to the *yet* under consideration here, I will put them aside for the purposes of this paper, focusing on *yet* as it is used in sentences like (4)-(6) and (7)-(10).

³ The speaker of (7) initially uttered this example with a *little*, but confirmed several months later that it would also be fine without a *little*. However, several other people indicated that the sentence was fine with a *little*, but sounded odd without it. Already it appears that acceptance of positive *yet* is not binary; later, I will refer to a “pan-dialectal spectrum” of *anymore* usage proposed previously by other authors, and this evidence certainly makes it seems as if *yet* may also inhabit such a spectrum. Note that this original speaker of (7) is a positive *anymore* user from the Philadelphia area, while those who indicated that they would not accept the sentence without a *little* are not positive *anymore* users. Whether the use of positive *anymore* correlates with the use of positive *yet* and whether this correlation is coincidental or reflects some deeper link between the semantics of *anymore* and the semantics of *yet* are questions that interest me, but I will not pursue them in this paper. Notice also that the NPI *yet* and the positive *yet* can coexist within the idiolect of a single speaker, as (7) and (8) demonstrate.
At this point, in order to further clarify the meaning of *anymore* and *yet* in both their NPI and positive incarnations, I provide the following table:

<table>
<thead>
<tr>
<th>previous state</th>
<th>current state</th>
<th>negative</th>
<th>positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative</td>
<td>NPI <em>yet</em></td>
<td><em>already</em></td>
<td>(positive <em>anymore</em>)</td>
</tr>
<tr>
<td>positive</td>
<td>NPI <em>anymore</em></td>
<td><em>still</em></td>
<td>(positive <em>yet</em>)</td>
</tr>
</tbody>
</table>

Table 1. Löhner’s square for *anymore* and *yet*.

This table is adapted from Levinson’s (2008: 56) representation of the “Löhner’s square” analysis of *still*, *already*, *anymore*, and *yet*; the original table is given in the Appendix to this paper. In my adaptation, I have distinguished between NPI and positive *anymore* and *yet* and added the positive variations (the parentheses being an indication they are restricted to certain speakers) alongside their approximate synonyms *already* and *still*.

In this paper, I will discuss several challenges posed by the behavior of *anymore* and *yet* under the verb *doubt* and under mirative emotive factives (verbs expressing a contrast between expectation and reality, such as *(be) surprised* and *(be) astonished*). In Section 1, I will present previous accounts of the semantics of *anymore* and *yet*, specifically those dealing with the contribution these adverbs make to the information asserted and presupposed in a given utterance. In Section 2, I will introduce data in which *anymore* and *yet* appear under the verb *doubt*, and I will show how these data problematize the traditional analyses of *anymore* and *yet*. Utilizing the notion of conversational implicature, as introduced by Grice (1975), I will propose revisions to these analyses. In Section 3, I will consider the behavior of *anymore* under *(be) surprised* and other mirative emotive factive verbs (MEFs). I will account for the issues that the MEF data brings to the traditional account of *anymore*—even with my revisions from Section 2. I will do
this by borrowing from a mechanism originally used by Altshuler & Michaelis (2018) to explain the behavior of *by* temporal adverbs. Then, in Section 4, I will appeal to the inherent aspectual nature of *anymore* and *yet* to explain why the two adverbs behave divergently under MEFs. Finally, in Section 5, I will conclude the paper with a discussion of possible future directions for research.

1 Previous accounts of *anymore* and *yet*

1.1 *Anymore* and change of state

Previous accounts of *anymore* (both the NPI and the positive variant) have noted its association with a change of state—more specifically, a contrast between a presupposition about a previous state and an assertion about a current state. This is the analysis offered in Hindle & Sag (1973), who argue that (11) asserts (12) and presupposes (13).

(11) Star doesn’t eat fish anymore.
(12) Star doesn’t eat fish (now).
(13) Star used to eat fish (at some point in the past).

Note that, crucially, the proposed assertion (12) is a negative sentence contrasting with the positive presupposition (13). Hindle & Sag further contend that (14), for those speakers who accept it, asserts (15) and presupposes (16).

(14) %Star eats fish anymore.
(15) Star eats fish (now).
(16) Star didn’t used to eat fish.

According to this analysis, positive *anymore* involves a positive assertion and a negative presupposition, exactly the opposite of NPI *anymore*. The key element that is common to both is the contrast between assertion and presupposition, which generates the change-of-state reading.
Hindle & Sag follow Labov (1972) in their account of NPI *anymore*, but they depart from his analysis of positive *anymore*. Labov argues that, rather than asserting (15) and presupposing (16), the positive *anymore* in (14) asserts both (15) and (16). In other words, while NPI *anymore* contrasts an assertion about the present with a presupposition about the past, positive *anymore* contrasts an assertion about the present with another assertion about the past. Furthermore, because of the complex nature of this semantic change, Labov argues that positive *anymore* is lexically distinct from NPI *anymore*. In order to show that their own account is better supported than Labov’s, Hindle & Sag must demonstrate that (16) is a presupposition of (14), not an assertion.

By definition, a presupposition, in contrast with an assertion, remains in effect even when the sentence containing it is negated or placed in the form of a question or conditional. For this reason, the traditional method for distinguishing a presupposition from an assertion involves what might be called the negation test. I will illustrate this test with the following set of sentences, which do not contain *anymore* and are therefore neutral to the questions under consideration in this paper:

(17) Nazifa has stopped watching cartoons in the morning.

(18) It’s not the case that Nazifa has stopped watching cartoons in the morning.

Both (17) and (18) imply (19):

(19) In the past, Nazifa watched cartoons in the morning.

Because (19) remains true even when (17) is negated, we can say that (19) is presupposed, not asserted, in (17). In contrast, (20) is implied by (17) but not by (18):

(20) Nazifa doesn’t watch cartoons in the morning (now).

Since negation cancels (20), we know that (20) is an assertion, not a presupposition, of (17).
The traditional negation test, however, runs into trouble when applied to positive *anymore*:

(21) It’s not the case that Star eats fish anymore.

Even for those speakers who accept and use positive *anymore*, (21) does not presuppose (16). Rather, this sentence means that Star used to eat fish and now does not; in other words, it has the same meaning as (11), which features the NPI *anymore*. Evidently, attempting to negate a positive *anymore* sentence results (perhaps unsurprisingly) in an NPI *anymore* interpretation. Since the *anymore* in (21) is the NPI *anymore*, it would be inappropriate to use this sentence to conclude anything about the presuppositional underpinnings of positive *anymore*.4

Because the polarity sensitivity of *anymore* makes the traditional negation test unacceptable for evaluating positive *anymore*, Hindle & Sag turn to a less conventional method for diagnosing presuppositionality. I will refer to their two-part method as the suspension test, since it is based on the claim that presuppositions, in contrast with assertions, can be “suspended”—that is, negated in a subsequent clause without causing a contradiction.5 In order to assess the validity of this method, I will again use the neutral sentence (17), which, as we already know from the negation test, presupposes (19) and asserts (20). To run the suspension test on this sentence, I first construct (22), in which (19) is negated in a clause immediately following (17).

(22) Nazifa has stopped watching cartoons in the morning; in fact, she may never have watched cartoons in the morning.

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4 As we will see shortly, *anymore* in questions also receives an NPI interpretation, which means that putting (14) in the form of a question would be equally useless for the purpose of diagnosing presuppositionality.

5 According to Hindle & Sag (1975: 90), this characteristic of presuppositions is “generally agreed” upon. It is different from the notion of “cancellation,” which involves the negation of the original clause, not the addition of a separate negated clause. Hindle & Sag’s argument is that presuppositions, though not cancellable, are suspendable.
If the premise behind the suspension test is correct, the presupposition (19) should be suspendable, and the acceptability of (22) confirms this. This is only the first component of the suspension test; we must now attempt to suspend the assertion (20):

(23) #Nazifa has stopped watching cartoons in the morning; in fact, she may still watch cartoons in the morning.

If we compare (22) with (23), there is a clear intuition that (23) is contradictory in a way that (22) is not. The results of this suspension test, then, indicate that (17) presupposes (19) and asserts (20). Since these conclusions are in accord with the results of the traditional negation test performed earlier, the suspension test also appears to be a valid way of distinguishing presupposed material from asserted material.⁶ Applying this test to positive anymore, Hindle & Sag offer a sentence similar to (24).

(24) #Star eats fish anymore, in fact, he may not eat fish (now).

In this sentence, (14) is juxtaposed with the negation of (15), and this results in an unacceptable contradiction (even for positive anymore speakers). This, of course, is consistent with the notion that (15) is asserted by (14), which Labov and Hindle & Sag agree on. Critically, however, positive anymore users are “unanimous” in their acceptance of (25), which juxtaposes (14) with the negation of (16).

(25) %Star eats fish anymore, in fact, he may have always eaten fish.

In this way, Hindle & Sag demonstrate that (16) is, in fact, presupposed and not asserted by (14). Based on this, they advance a unified account of anymore: it represents a contrast between a presupposition and an assertion, whether between a positive presupposition and a negative

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⁶ The differences between the suspension test and the negation test are worth highlighting here. In the negation test, the original sentence is negated, and the implications of this negated sentence are then examined. In contrast, the suspension test involves constructing two new sentences: one in which the purported presupposition is suspended and one in which the purported assertion is suspended. The successful application of the suspension test relies on the contrast between these two new sentences. Incidentally, it is not clear that this test is capable of distinguishing between a presupposition and a conversational implicature (a concept that will be important to our analysis in the next section). Regardless, it furnishes sufficient evidence to counter Labov’s claim that (16) is asserted.
assertion, as with the NPI anymore in (11), or between a negative presupposition and a positive assertion, as in (14).

More recently, the idea that anymore denotes a contrast between current and previous states has been echoed by Levinson (2008: 54), who references the common idea that “negative aspectual particles” such as yet, already, still and anymore “combine an assertion regarding the reference time in the sentence (t_a) with a presupposition regarding an earlier moment (t_{ep}).” In the case of anymore, the assertion and the presupposition evince a contrast. Recognizing the change-of-state reading implied in this analysis, Levinson refers to anymore as an “aspectual discontinuative particle.” However, while making note of the existence of the “colloquial” positive anymore, Levinson opts not to include it in his analysis. As a consequence, his description of anymore references only situations where a negative assertion is paired with a positive presupposition. That said, with the insights from Hindle & Sag, it is not difficult to expand this description to include cases where a positive assertion is juxtaposed with a negative presupposition. The account of anymore developed in both Hindle & Sag and Levinson is summarized in (26), using some elements of Levinson’s formalism.

(26) anymore combines an assertion $P$ that holds true at the reference time ($t_a$) with a presupposition $\neg P$ that was true at some earlier time ($t_{ep}$).

1.2 The pan-dialectal anymore

Hindle & Sag use their unified analysis of anymore to make a broader point about the nature of anymore licensing across dialects. They argue that, rather than dividing NPI and positive anymore into two discrete lexical items, as Labov does, it is more appropriate to envision anymore as existing on a pan-dialectal continuum, with a spectrum of environments ranging from the standard NPI anymore seen in (11) to the canonical positive anymore seen in
In between are various environments under which *anymore* is more or less likely to be judged felicitous. Below is a sampling of some of the environments they suggest, arranged in a rough hierarchy from most widely accepted to least widely accepted based on my own intuitions and informal observations of other native speakers’ judgments.\(^7\)

(27) Star doesn’t eat fish anymore.

(28) I doubt Star eats fish anymore.

(29) %I’m surprised Star eats fish anymore.

(30) %Star hates eating fish anymore. / %Star’s afraid to eat fish anymore.

(31) %Star eats fish anymore.

While Hindle & Sag do not undertake a detailed discussion of the above environments and merely note that *anymore* has been observed to occur in all of them, they do draw attention to the use of *anymore* in questions, as in (32).

(32) Does Star eat fish anymore?

Hindle & Sag use sentences like (32) as additional evidence for a unified pan-dialectal *anymore*. They argue that, if NPI *anymore* and positive *anymore* were two different words, (32) would be ambiguous, able to mean either (33) or (34).

(33) Does Star still eat fish?

(34) Does Star eat fish nowadays (given that he didn’t eat fish in the past)?

However, the authors report that they were unable to find such an ambiguity (and neither have I been able to find it); even for positive *anymore* speakers, (32) has only one interpretation, which is (33).

\(^7\) One speaker I talked to (who is from Connecticut, well outside the traditional stomping ground of positive *anymore*), indicated that she found (28) a bit odd, but even she found it somewhat less odd than (29) and much less odd than (30) and (31), the latter two of which she seemed unable to get a reading for. For transparency: I myself might say (28) and (29), but probably not (30) and (31).
1.3 Yet and continuity of state

Levinson’s (2008) account of negative aspectual particles also includes a treatment of *yet*.

According to Levinson, *yet*, a “negative continuative particle,” differs from *anymore* in that it describes additivity (as opposed to contrast) between a current state and a previous state. Thus the NPI *yet* contains a negative presupposition about the past and a negative assertion about the present. I will illustrate this analysis through examples, much as I did with *anymore*.

(35) Andrew isn’t in college yet.

According to Levinson, the sentence in (35) asserts (36) and presupposes (37).

(36) Andrew isn’t in college now.

(37) Andrew wasn’t in college before.

In this case, we can use the traditional negation test to evaluate these claims:

(38) It’s not the case that Andrew isn’t in college yet.

The sentence in (38) means that Andrew is now in college; therefore, it does not imply (36), but does imply (37). This is consistent with Levinson’s analysis: (36) is an assertion and (37) is a presupposition.

Again, Levinson does not examine positive *yet*; however, if it is true that *yet* is a continuative particle, we would expect positive *yet* to combine a positive assertion about the present with a positive presupposition about the past. That is, (39) should assert (40) and presuppose (41).

(39) %Mary lives in Bryn Mawr yet.

‘Mary still lives in Bryn Mawr.’

(40) Mary lives in Bryn Mawr (now).

(41) Mary used to live in Bryn Mawr.
As with *anymore*, the negation test will fail if applied here, as *yet* will take on an NPI interpretation—(42) actually means that Mary does not live in Bryn Mawr and never used to; in other words, she doesn’t live in Bryn Mawr yet.

(42) It’s not the case that Mary lives in Bryn Mawr yet.

Because of this, I will instead apply the suspension test to (39):

(43) #Mary lives in Bryn Mawr yet; in fact, she may not live in Bryn Mawr now.

(44) %Mary lives in Bryn Mawr yet; in fact, she may have just moved there.

It is odd to suspend (40) immediately after uttering (39), as in (43), which indicates that (39) asserts (40). On the other hand, those who accept positive *yet* also accept (44), in which (41) is suspended. This suggests that (39) does indeed presuppose (41) and does not assert it.

1.4 *Yet* and the expectation of discontinuity

I would like to add to Levinson’s analysis a proposal based on my own intuitions. It seems to me that a sentence like (35) also presupposes something like (45):

(45) Andrew is expected to be in college (either now or at some point in the future).

Using (38), the negation of (35), we can apply the negation test to (45). The sentiment in (45) seems to be implied by both (35) and (38); both suggest that Andrew is expected to be in college. In the case of (35), he is not in college at the moment, but there is an implied expectation that he will be at some point in the future. In the twice-negated (38), he is indeed in college now, just as we, the interlocutors, expected. For the positive *yet* sentence (39), a similar presupposition concerning expectations can be detected:

(46) Mary is not expected to be living in Bryn Mawr anymore.

Indeed, the suspension test corroborates this, as (46) can be felicitously suspended:
(47) Mary lives in Bryn Mawr yet; in fact, we have no reason to expect that she will ever leave.

So although *yet* is a continuative particle, it is not exactly free of the notion of a change of state. *Yet* presupposes, not an actual change of state, but the *expectation* of a change of state.

Combining these observations with Levinson’s analysis, we can construct the following generalization of *yet*:

(48) *Yet* combines an **assertion** *P* that holds true at the reference time (ta) with a **presupposition** that *P* was also true at some earlier time (teP) and another **presupposition** that ~*P* is expected to be true.

The generalizations of *anymore* and *yet*, respectively, in (26) and (48) constitute the starting points for my analysis. The data that I will introduce throughout the rest of this paper will serve to complicate the analyses represented in these generalizations.

1.5 The pan-dialectal *yet*?

Much like *anymore*, *yet* appears in a range of environments, some of which are more acceptable than others to non-users of positive *yet*:

(49) Andrew isn’t in college yet.

(50) I doubt Andrew is in college yet.

(51) %I’m surprised Andrew is in college yet.

(52) %Andrew’s afraid of going to college yet.

(53) %Andrew’s in college yet.

Recall that, as Hindle & Sag noted, *anymore* is not ambiguous in questions; this was one of their pieces of evidence for a unified analysis of *anymore*. *Yet*, however, *does* show ambiguity in questions: for positive *yet* speakers, (54) can have either of the readings in (55) and (56).
(54) Does Mary live in Bryn Mawr yet?
(55) %Does Mary still live in Bryn Mawr?
(56) Does Mary live in Bryn Mawr now (which she did not before, but which we expect she might at some point)?

The fact that *yet* is ambiguous in questions leaves open the possibility that NPI *yet* and positive *yet* might be two different words, with positive *yet* represented in the reading in (55) and NPI *yet* represented in the reading in (56). On the other hand, since the environments in which *yet* can appear are as broad in their range and as fuzzy in their boundaries as the environments in which *anymore* can appear, it seems somehow unsatisfying to claim that *anymore* inhabits a spectrum, whereas *yet* encompasses two distinct lexical items. In this paper, I will not address this issue directly; however, I will focus the remainder of my analysis on two environments that seem to live on the boundary between positive *anymore* and NPI *anymore* and between positive *yet* and NPI *yet*. The first case, represented by (28) and (50), involves the use of *anymore* and *yet* under the negative emotive factive verb *doubt*. The second case, represented by (29) and (51), involves the use of *anymore* and *yet* under *be* surprised and other mirative emotive factives. Both of these cases present some issues for the generalizations developed in (26) and (48), and I will show how these generalizations can be revised to make sense of the data.

2 The problem of *anymore* and *yet* under *doubt*

2.1 *Doubt* and *anymore*

Consider (28), reproduced below, which asserts (57) and presupposes (58).

(28)  I doubt Star eats fish anymore.
(57)  I doubt Star eats fish.
(58)  Star used to eat fish.

This is arguably confirmed by the negation test:
(59) It’s not the case that I doubt that Star eats fish anymore.

To me, (59) does not seem to imply (57), but does seem to retain the presupposition in (58). That said, (59) is a particularly contrived and unnatural sentence, so this intuition may not be clear for all speakers. In recognition of this, I will supplement my argument with the suspension test:

(60) %I doubt Star eats fish anymore; in fact, I may not doubt that Star eats fish.

(61) I doubt Star eats fish anymore; in fact, he may never have eaten fish.

The fact that (58), but not (57), can be suspended lends additional support to the notion that (57) is asserted and (58) is presupposed. If this is true, then a problem emerges. The generalization in (26) specifies that *anymore* sentences contain a contrast between the asserted material and the presupposed material. But (57) does not contrast with (58) in the way we would expect it to.

While (58) says that, at some point in the past, it was objectively true that Star ate fish, (57) says nothing about Star actually eating or not eating fish; rather, it speaks to the epistemic state of the subject on this matter. This is problematic for the account of *anymore* represented in (26).

2.2 *Doubt and yet*

A very similar issue arises when *yet* appears under *doubt*, as in (50), reproduced below. I argue that (50) asserts (62) and presupposes (63) and (64).

(50) I doubt Andrew is in college yet.

(62) I doubt Andrew is in college.

(63) Andrew wasn’t in college before.

(64) Andrew is expected to be in college (either now or at some point in the future).

The negation test once again supports this claim, since (65), to the extent that one has the patience to decipher it, implies (63) and (64) but not (62).

(65) It’s not the case that I doubt Andrew is in college yet.
The suspension test also returns a consistent result; (62) cannot be suspended, but (63) and (64) can.\(^8\)

\begin{align*}
(66) & \# \text{I doubt Andrew is in college yet; in fact, I don't doubt he's in college.} \\
(67) & \text{I doubt Andrew is in college yet; in fact, he may have been in college at one point,} \\
& \text{(but he dropped out).} \\
(68) & \text{I doubt Andrew is in college yet; in fact, there is no reason to expect that he will} \\
& \text{ever go to college.}
\end{align*}

If (50) asserts (62) and presupposes (63) and (64), then the generalization in (48) is now in trouble as well. According to (48), \textit{yet} sentences should display additivity between the assertion about the present and the presupposition about the past. But this additivity is absent as far as (62) and (63) are concerned, since the first, again, describes the subject’s epistemic state, while the second deals with the objective reality of the situation. Nor is (64), the presupposition about future expectations, helpful to us in resolving this discrepancy. It is apparent that both (26) and (48) need to be revised to account for these new data.

\section*{2.3 \textit{Anymore, yet, and the role of conversational implicature}}

The answer to this puzzle can be derived from the simple observation that anybody who uttered (28) would most likely be doing so with the intention of suggesting that Star does not, in fact, eat fish. Likewise, anybody who uttered (50) would most likely mean to suggest that Andrew is not in college. In both cases, the speaker, who is perhaps not sufficiently certain about the truth of these propositions, is simply unwilling to commit to actually asserting them. We can say that (28) (repeated below) carries the conversational implicature in (69) and that (50) (repeated below) carries the conversational implicature in (70).

\begin{itemize}
\item Notice, however, that some pragmatic gymnastics are required in order to felicitously suspend (63).\end{itemize}
I doubt Andrew is in college yet.

Star does not eat fish anymore.

I doubt Andrew is in college yet.

Andrew isn’t in college yet.

The notion of conversational implicature was pioneered by Grice (1975). Grice argued that all conversational contributions are assumed, by default, to align with what he calls the Cooperative Principle:

Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

The four “maxims” of Quantity, Quality, Relation, and Manner follow from this overarching principle, with the maxim of Relation (“Be relevant”) possibly the one that is most germane to this issue. According to Grice, if it is assumed that the conversational partner is willing and cooperative, any real or apparent violations of a maxim will be resolved by the generation of conversational implicatures. The classic example of this mechanism, as given by Grice (1975: 51), is as follows:

Wang Hao: I’m out of gas.

Li Jing: There’s a garage around the corner.

Li Jing, while not saying so outright, is clearly suggesting that Wang Hao can get gas at the garage around the corner. If this were not the case, and Li Jing was aware that the garage was closed or did not have gas, then Li Jing’s remark, being irrelevant to Wang Hao’s predicament, would violate the maxim of Relation. Similarly, a person’s subjective state of doubt, in most cases, is not in and of itself relevant to other people. Therefore, when a person says that they doubt P, as in (28), they are frequently doing so to advance the argument that not P—otherwise,
their conversational contribution would be discordant with the maxim of Relation. This is true, incidentally, even when the doubter is someone other than the speaker. Thus I argue that (73) also has (69) as a conversational implicature, since Francesca’s subjective doubt would, in most real-world circumstances that I can think of, be irrelevant to the listener unless it is being offered as evidence of some fact of the external reality.9

(73) Francesca doubts that Star eats fish anymore.

Notice that, in implicating (69), (28) implicates a proposition that contrasts with (58), the presupposition about the past. I argue that this contrast between implicature and presupposition is qualified to constitute the change of state that is the defining element of anymore, the negative aspectual particle. With this in mind, I propose that the previous account of anymore, as summarized in (26), be revised to stipulate that the vital contrast can occur between either an assertion or an implicature about the present and a presupposition about the past:

(74) anymore combines an assertion OR a conversational implicature P that holds true at the reference time (t_a) with a presupposition ~P that was true at some earlier time (t_p).

In a similar way, I revise the generalization of yet in (48) to include cases where the continuity lies between an implicature and a presupposition:

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9 It’s possible to think of scenarios where Francesca’s doubt would indeed be central to the point the speaker is advancing and where ~P is not necessarily implicated:

Francesca’s so skeptical, she (even) doubts there’s any good in the world anymore.
Francesca’s so skeptical, she doubts good people (even) exist anymore.

Anymore is still permissible in these sentences, which is a problem for my analysis. I do not have a firm solution to this problem at this time, but I will note a few observations. First, this kind of reading seems to be most easily obtained in situations where the proposition doubted is endowed with exceptional significance and gravity. It is difficult to think of a situation where (73), for example, could have this kind of reading, since a doubt about Star eating fish is not really a serious enough doubt to warrant characterizing someone as a “skeptical” person. Second, to say that ~P is not necessarily implicated by the sentences above is something of an understatement: in fact, these sentences cannot implicate ~P and can only implicate P. If the speaker did not believe that P is true, they would have no grounds to bring attention to Francesca’s doubt and conclude from it that she is skeptical. Later, I will suggest that, in sentences with mirative emotive factives, it is a contrast in beliefs that allows for the felicitous use of anymore. It is possible that something similar is going on here with a contrast between the speaker’s beliefs and Francesca’s beliefs. This idea may be supported by the fact that, according to my intuitions, sentences like the two above are improved by the addition of even, which, as I will show later, is also a characteristic of MEF sentences.
(75) Yet combines an assertion or a conversational implicature $P$ that holds true at the reference time ($t_a$) with a presupposition that $P$ was also true at some earlier time ($t_{ep}$) and another presupposition that $\sim P$ is expected to be true.

The revised generalizations in (74) and (75) account for the behavior of anymore and yet under doubt. Indeed, I predict that similar behavior would be associated other emotive factives that generate a negative implicature, but, since my focus in this paper is on the data surrounding doubt, I will leave these other cases for future research.

3 Explaining the unexpected meaning of anymore under MEFs

3.1 Anymore and MEFs

Somewhat less widely accepted than sentences like (28) and (50) are sentences like (29) and (51), reproduced below, in which anymore and yet appear under the verb (be) surprised.

(29) %I’m surprised Star eats fish anymore.

(51) %I’m surprised Andrew is in college yet.

In fact, (be) surprised in these examples could be substituted for any other mirative emotive factive (MEF)—my term for emotive factives expressing mirativity, or a contrast between expectation and reality. Some other examples of this type of verb can be seen in (76)-(79).

(76) %It’s astonishing that Star eats fish anymore.

(77) %I’m shocked that Star eats fish anymore.

(78) %It’s amazing that Star eats fish anymore.

(79) %They’re flabbergasted that Star eats fish anymore.

In fact, the effects seen with anymore under MEFs also occur with a number of verbs that do not obviously denote surprise. Take the following sentences with (is) disappointed, (is) amused, and (is) ironic:

(80) %I’m disappointed that Star eats fish anymore.
(81) I’m amused that Star eats fish anymore.

(82) It’s ironic that Star eats fish anymore.

Under closer inspection, these verbs, too, suggest a contrast between expectation and reality: disappointment occurs when reality falls short of one’s expectations, amusement generally results from a sudden and unexpected juxtaposition, and a “reversal of expectations” is the textbook definition of irony. Therefore, all of these verbs, and presumably many others, can also be subsumed under the MEF category. In my analysis, I will stick to the sentences in (29) and (51) with (be) surprised, but my conclusions will be applicable to mirative emotive factives as a class. I argue that (29) asserts (83), presupposes (84), and implicates (85).

(83) I’m surprised Star eats fish.

(84) Star used to eat fish.

(85) Star still does eat fish.

As evidence that (83) is asserted and (84) is presupposed, consider first the negation test applied to (29):

(86) It’s not the case that I’m surprised Star eats fish anymore.

I would argue that (86) still implies (84) and fails to imply (83). However, this sentence is perhaps even more cumbersome than either (59) or (65), so I will use the suspension test as additional support:

(87) #I’m surprised Star eats fish anymore; in fact, I’m not surprised that Star eats fish.

(88) %I’m surprised Star eats fish anymore; in fact, he never used to eat fish.

This test confirms that (83) cannot be suspended and (84) can, consistent with my claim that the former is asserted and the latter is presupposed. With this conclusion, however, the first puzzle concerning mirative emotive factives emerges. Notice that, among (83), (84), and (85), there is
no apparent change of state or contrast at all, whether between the presupposition and the assertion or between the presupposition and the implicature. Indeed, items (83)-(85) are all positive in nature; the assertion is that there is some state of surprise, the presupposition is that Star formerly ate fish, and the implication is that he continues to do so. This distinguishes the anymore in (29) from the familiar positive anymore, since positive anymore would be expected to presuppose that Star did not eat fish before some point in the past, thus preserving the change of state reading. In fact, precisely because (29) presupposes that Star used to eat fish, I argue that the anymore in (29) really is the NPI anymore, not the positive anymore. In any case, the facts surrounding (29) seem to fly in the face of both the traditional account of anymore represented in (26) and in my revised account (74)—and even in the very idea that anymore necessarily describes a change of state—and this presents an interesting conundrum.

3.2 By temporal adverbs: another change-of-state marker

In my solution to this puzzle, I will make reference to Altshuler & Michaelis’s (2018) account of by temporal adverbs (BTAs). BTAs are phrases such as by now or by 1 PM on Tuesday, December 11. According to Altshuler & Michaelis, BTAs, like anymore, have change of state as an essential part of their meaning. In their analysis, this change of state is conceived of as an event, specifically the onset event of a resultant state. As evidence of this, they note the aspectual restrictions on the use of BTAs, illustrated by the four sentences below (Altshuler & Michaelis 2018: 3).

(89) They (had) arrived by Friday. (achievement)
(90) She (had) cleaned out her locker by Monday. (accomplishment)
(91) ?She (had) walked around by noon. (activity)
(92) ?She loved hot toddies by November. (state)
BTAs are fine in the achievement/accomplishment sentences (89) and (90), but seem out of place in the activity/state sentences (91) and (92). Altshuler & Michaelis argue that this is because sentences of this type, taken by themselves, do not easily lend themselves to an interpretation wherein a change-of-state event has occurred. That is, while (89) clearly entails an arrival event that also constitutes the onset of a resultant state, it is difficult to see what kind of event could serve as the onset of the state of loving hot toddies described in (92), and the same can be said of the state of “having walked around” described in (91). Taking a stroll or loving a certain beverage are typically not thought of as “results” of anything in particular; it is possible to think of situations where they could be, but this requires specific context and a considerable amount of imagination.

Altshuler & Michaelis note that the aspectually restricted nature of BTAs sets them apart from most other temporal adverbs. In fact, however, this unusual characteristic is also seen in anymore, although the nature of the aspectual restriction is a bit different.\(^1\) Consider the following set of sentences:\(^1\)

\[
\begin{align*}
(93) & \text{ The dog doesn’t die anymore. (achievement)} \\
(94) & \text{ Linda didn’t squash the bug anymore. (accomplishment)} \\
(95) & \text{ Tanjuma didn’t ride a bike to school anymore. (activity)} \\
(96) & \text{ Elia doesn’t love her cat anymore. (state)}
\end{align*}
\]

\(^1\) Although the aspectual restrictions on anymore do not bear directly on the data I am seeking to account for in this paper, I mention them in order to demonstrate the parallels between anymore and BTAs.

\(^1\) I can imagine a sentence like:

Linda didn’t squash the bug any more.

which is equivalent to:

Linda didn’t squash the bug any further.

As in, she had already partially squashed the bug but then decided not to continue squashing it. This seems to be different from the temporal adverb anymore, which is generally spelled as one word (although it was once more common to spell it as two words) and, while presumably originating from a combination of any and more, has since become its own lexical item with a unique meaning and distribution. I assume that the any in the two-word anymore is simply the regular NPI any and that the more is simply the regular lexical item more.
The same distribution is active for the positive anymore:

(97) #The dog dies anymore. (achievement)

(98) #Linda squashed the bug anymore. (accomplishment)

(99) %Tanjuma rides a bike to school anymore. (activity)

(100) %Elia loves her cat anymore. (state)

Anymore is semantically odd with the achievement and accomplishment predicates in the sentences above, but fine with activities and states. That said, it is possible to construct achievement and accomplishment sentences in which anymore would be acceptable:

(101) The ground doesn’t freeze anymore (now that it’s getting warmer).

(102) Briana doesn’t tie her shoes anymore.

Observe that (95), (101), and (102) can all only be interpreted habitually. And, as noted by Vendler (1957), habits are also states. This suggests that, while both BTAs and anymore are aspectually restricted, the restrictions on anymore are even stronger than the restrictions on BTAs: anymore is acceptable only with predicates that can be interpreted as denoting ongoing states. 12

3.3 BTAs, anymore, and the contribution of expectation

Altshuler & Michaelis note that, in some cases, BTAs become more felicitous with the addition of a modal, specifically an epistemic-stance indicator specifying the degree of the speaker’s

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12 Interestingly, even a sentence like (93) can be made acceptable in a context where reality is assumed to be revisable—such as in the context of fiction:

I’m writing a novel about a boy and a dog, and in the original version the dog dies at the end. But my editor thought that was too cliche, so I had to revise it so that the dog doesn’t die anymore.

Strangely, this does not seem to have a habitual reading, but it may be explained by the convention of treating all events in a work of literature as if they are ongoing—hence the custom of using present tense in a sentence like the one above. Note that a similar context will also improve the felicitousness of a BTA with a stative or activity predicate:

I’m writing a novel about a boy and a dog, and in the original version the boy doesn’t like the dog until Chapter 7. But my editor thought the story sort of dragged along at the beginning, so I had to revise it and now the boy likes the dog by Chapter 4.
certainty of or commitment to a proposition. The key data illustrating this interaction include the following sentences:

(103) They *(must)* prefer white wine by now.

(104) They *(probably)* live in Mountain View by now.

Both (103) and (104), if read in isolation, are somewhat peculiar (if not quite ungrammatical) without an epistemic modal like *must* or *probably*. Altshuler & Michaelis suggest that, in the absence of *must* or *probably*, the states described in (103) and (104) are difficult to conceive of as results of some onset event. In other words, they run into the same problem as (91) and (92): the change-of-state reading is difficult to get. However, when *must* or *probably* is inserted into these sentences, they are no longer making an assertion about the events of the external reality. Instead, they are speaking to the epistemic stance of the speaker. The use of *must* and *probably* in (103) and (104) suggests that, as a result of some (most likely indirect) evidence, the speaker has now come around to the conclusions advanced in these sentences. This act of coming to a conclusion, Altshuler & Michaelis propose, is able to serve as the change-of-state event required by the BTAs. In fact, they argue, in a sentence like (103), as long as *must* or *probably* is present, it is not even crucial that an actual change in the wine preference has occurred. All that is required is that there was a change in the speaker’s beliefs about the wine preference.

How does this relate to the behavior of *anymore* when it occurs with *(be) surprised* and similar verbs? Mirative emotive factives, by definition, convey that the subject initially expected one thing, but has now come to realize that the opposite is true. Thus (83), repeated below, which is the assertion in (29), can be viewed as entailing something like (105) and (106).

(83) %I’m surprised Star eats fish.

(105) I originally expected that Star didn’t eat fish.
I now know that Star eats fish.

In the contrast between (105) and (106), we do find a change of state—a contrast between a past state of affairs and a present state of affairs. My contention is that, much as the change of beliefs implied by must/probably in (103) and (104) sanctions the use of a BTA in those sentences, the reversal of beliefs conveyed by surprised in (29) is, for those speakers who accept the sentence, sufficient to serve as the change of state inherent in anymore—even though, in the situation described by (29), no actual change has occurred in whether or not Star eats fish. Indeed, in the world described by this sentence, Star has always eaten fish; what has changed is the epistemic stance of the speaker regarding this fact.

In further support of this argument, note that inserting even into (29) improves the sentence for some speakers:

(107) I'm surprised Star %(even) eats fish anymore.

Even without delving into the formal semantics of even in this sentence (although there is surely much to be said on this matter), there is a basic intuition that the addition of this word lends a heightened sense of incredulity to the utterance. I suggest that this additional source of mirativity alongside the mirative factive, by highlighting the change of beliefs represented in (105) and (106), makes the change-of-state reading more prominent and, thus, makes the sentence palatable to some speakers who would otherwise not accept it.

4 Addressing the divergent behavior of yet under MEFs

Given that, under doubt, anymore and yet depart in similar ways from their usual behavior, it would be reasonable to predict that they also exhibit parallel behavior under MEFs. In fact, this is not the case. Consider (108) below, in which positive yet appears under (be) surprised.

(108) %I'm surprised Nisha is outside yet.

‘I’m surprised Nisha is still outside.’
I argue that (108) asserts (109) about the present, presupposes (110) about the past, and implicates (111) about the present (I have said, of course, that yet also involves a presupposition about the future, which I will touch on momentarily).

(109) I’m surprised Nisha is outside.
(110) Nisha was outside before.
(111) Nisha is outside now.

Though I have entertained (59), (65), and (86), my tolerance does not extend to the sentence that results from attempting to apply the negation test to (108):

(112) ?It’s not the case that I’m surprised Nisha is outside yet.

In my opinion, this sentence really is too unnatural to be useful, so I will instead apply the suspension test to (109) and (110) in turn.

(113) #I’m surprised Nisha is outside yet; in fact, I’m not surprised Nisha is outside.
(114) %I’m surprised Nisha is outside yet; in fact, she wasn’t outside before.

The suspension test is consistent with my claim that (109) is an assertion and (110) is a presupposition. Now observe that (109), (110), and (111) are all positive in nature. This indicates that the yet in (108) is the positive yet and not the NPI yet. But what about the final component of yet as defined in (75), which is the presupposition about speaker expectations? If the yet in (108) really is the positive yet, then we would expect it to presuppose something like (115).

(115) Nisha is expected not to be outside (now or at some point in the future).

However, if we try to apply the suspension test to (115), there is an unexpected failure:

(116) #I’m surprised that Nisha is outside yet; in fact, I expected her to be outside.
But, of course, the suspension test fails in (116) not because (115) is not presupposed, but because suspending (115) happens to contradict (109), which is the state of surprise asserted in (108). After all, (109) entails (117) and (118).

(117) I originally expected that Nisha wasn’t outside.

(118) I now know that Nisha is outside.

Negating (115) is tantamount to contradicting (117), which is part of the assertion of the sentence. So the failure of the suspension test in (116) is simply due to the meaning of (be) surprised and need not pose a problem for the claim that the yet in (108) is the positive yet.

This is where the behavior of yet departs from that of anymore: recall that the anymore in (29) is the NPI anymore, presupposing that Star did formerly eat fish. Why do MEFs trigger the standard NPI interpretation of anymore, while yet takes on the non-standard positive yet reading under the same class of verbs? I argue that, because yet is by nature a continuative particle, the NPI yet interpretation is simply unavailable in a sentence like (108). In order to understand this, consider what (108) would mean if the yet it contains did have the NPI yet interpretation. In that case, it would still assert (109) and implicate (111), reproduced below, but it would presuppose (119) and (120).

(109) I’m surprised Nisha is outside.

(119) Nisha wasn’t outside before.

(120) Nisha is expected to be outside (now or at some point in the future).

(111) Nisha is outside now.

There are two issues here. The first is that (120) is incompatible with (117), which is part of what is asserted in (109). The second is that (119), the presupposition about the past, contrasts with (111), the implicature about the present. This means that, if (108) encompassed the meanings in
(109), (119), (120), and (111), the sentence would actually be describing a situation that is not continuative, and such a situation would not be compatible with the meaning of the continuative particle *yet*. In the previous section, I investigated (29), an example in which the negative aspectual particle *anymore* is likewise apparently used in a situation incongruent with its meaning, but I was able to resolve this by arguing that the change of beliefs implied by an MEF is able to stand in for the change of state required by *anymore*. But since *yet* is continuative and actually requires the exact opposite of a change of state, this aspect of the MEFs has nothing to contribute in this regard. For both of these reasons, the NPI *yet* interpretation is impossible under mirative factors, and the only possible reading of (108) is one that invokes the NPI *yet*.

5 Conclusions

Through my investigation of the temporal adverbs *anymore* and *yet* and their interactions with the verb *doubt* and with mirative emotive factives, I have complicated and expanded on previous analyses of these two words. The data surrounding *doubt* show that conversational implicatures, in addition to assertions and presuppositions, are often central to the contributions these two adverbs make to the meaning of a sentence. Meanwhile, the behavior of *anymore* under MEFs paints an even more complex picture—one that suggests that, as far as the negative aspectual particle is concerned, a contrast between reality and expectations can constitute a change of state, even if there has been no change between the past state of affairs and the present state of affairs in the reality external to the speaker. In this respect, *anymore* is reminiscent of *by* temporal adverbs as described by Altshuler & Michaelis (2018: 17), who argue that, under certain epistemic modals, such adverbs evince “a reconciliation procedure in which a knowledge state correlates with a resultant state.” Whether the generalization in (74) can be further revised to
accommodate these findings, or whether attempting to formulate this kind of formal description is even appropriate for either *anymore* or *yet*, remains to be seen.

The positive *anymore* phenomenon is a particularly well-known example of variation within the English language, and it has been a popular topic to investigate since at least the early 1900s. In this paper, I have teased out a number of sentences that represent "marginal" usages of *anymore*, and the people I spoke to indicated a wide variety of judgments concerning their acceptability. Based on these observations, we might imagine dividing *anymore* users into types somewhat like the following, with further refinement to be expected as research continues:

i. Speakers who accept *anymore* only in cases where a positive presupposition about the past contrasts with a negative assertion about the present. — *Star doesn’t eat fish anymore.*

ii. Speakers who accept *anymore* in the above environments and in cases where a positive presupposition about the past contrasts with a negative implicature about the present. — *I doubt Star eats fish anymore.*

iii. Speakers who accept *anymore* in all of the above environments and in cases where a negative belief held in the past contrasts with a positive belief held in the present.13 — *I’m surprised Star eats fish anymore.*

iv. Speakers who accept *anymore* in all of the above environments and in cases where a negative presupposition about the past contrasts with a positive assertion about the present. — *Star eats fish anymore.*

Note the "cascading" structure of the hierarchy: the availability of a particular environment for any given speaker entails the availability of all environments above it. This hierarchy of *anymore*

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13 The opposite case, where a positive belief held in the past contrasts with a negative belief held in the present seems to already be covered by ii: a sentence like *I’m surprised Star doesn’t eat fish anymore* presupposes that Star formerly ate fish and conversationally implicates that he no longer does.
use has the potential to facilitate further research on the use, distribution, and semantics of 
anymore and positive anymore.

Perhaps an even more pressing topic for further investigation is the phenomenon of 
positive yet. As far as I know, few linguists to date have noted the existence of this usage, let 
alone examined it in any great detail. The ambiguity of yet in questions raises the issue of 
whether positive and NPI yet, in contrast to positive and NPI anymore, might be two distinct 
lexical items—and yet the yet data presented above are reminiscent of the “spectrum” seen with 
anymore. For yet, we might imagine a hierarchy somewhat like the following:

i. Speakers who accept yet only in cases where a negative presupposition about 
the past coincides with a negative assertion about the present. — Andrew isn’t in college yet.

ii. Speakers who accept anymore in the above environments and in cases where 
a negative presupposition about the past coincides with a negative implicature 
about the present. — I doubt Andrew is in college yet.

iii. Speakers who accept anymore in all of the above environments and in cases 
where a positive presupposition about the past coincides with a positive 
presupposition about the present. — Andrew is in college yet. / I’m surprised 
Andrew is in college yet.

But there is surely much more to be added to such a hierarchy; for example, a full analysis might 
also account for the behavior yet when it is not being used as a temporal adverb (e.g., the usages 
listed in fn 2). We might also ask whether and why the population of positive anymore users 
overlaps significantly with the population of positive yet users. In general, my hope is that 
positive yet, too, will someday grip the attention of linguists studying variation in English, since 
the breadth of environments in which yet can occur, as well as the subtlety of speakers’
judgments on its acceptability, make it every bit as interesting as positive *anymore*. The positive
*yet* data presented in this thesis might serve as a starting point for such inquiries.

Appendix

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<th>previous state</th>
<th>current state</th>
<th>negative</th>
<th>positive</th>
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<td>negative</td>
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<td><em>already</em></td>
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<tr>
<td>positive</td>
<td><em>anymore</em></td>
<td></td>
<td><em>still</em></td>
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*Table 2.* Löhner’s square, as given in Levinson (2008: 56).


Levinson, Dmitry. 2008. Licensing of negative polarity particles yet, anymore, either and neither:


