A Present Perfect Puzzle for African- American English[*]

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1.   An Old Puzzle

The focus of this paper is the interaction of temporal adverbials with African-American English (AAE) perfect constructions. Its title, however, "A Present Perfect Puzzle for African-American English", alludes to a well known set of Standard English (SE) facts that has been widely discussed in the literature (e.g. Comrie 1976, McCoard 1978, Dowty 1979), and since Klein (1992), has come to be known as the Present Perfect Puzzle. This puzzle, illustrated in (1), can be characterized as follows the example.

(1)   a. *John has baked a cake yesterday/on Friday/at 5 o'clock
        b.   John had baked a cake yesterday/on Friday/at 5 o'clock
        c.   John must have baked a cake yesterday/on Friday/at 5 o'clock

                            (Note: all examples are in SE unless otherwise marked)

Certain past-time denoting adverbials such as *yesterday*, *on Friday*, and *at 5 o'clock*, are incompatible with SE present perfect constructions, but are perfectly compatible with SE past perfect and non-finite perfect constructions. Note that in the examples in (1), both *on Friday*, and *at 5 o'clock* are taken to be used definitely; they refer to a particular Friday and 5 o'clock period, and do not mean *On a Friday* or *at some 5 o'clock*. Used indefinitely, they are compatible with the SE present perfect as are unambiguously indefinite past-time denoting adverbials such as *on a Friday* in (2).

(2)   John has baked a cake on a Friday

        This puzzle gains much of its intrigue and perhaps even part its status as a true puzzle from the fact that the incompatibility of these adverbials with the present perfect is

a fact of (Standard) English, but not of Dutch, Icelandic, Italian or German, all of which have present perfect constructions, and all of which allow the combination. Musan's example in (3) illustrates this point for German.

(3)   Arnim hat   gestern   gekocht   German
        Arnim has   yesterday   cooked   Musan (2002)

Numerous authors (e.g. Klein 1992, Giorgi and Pianesi 1998, Musan 2001, Pancheva and von Stechow 2004) have offered explanations for the SE facts and the typological split between SE and languages like German, but a widely agreed upon solution to the puzzle has yet to be found.

2.   Some New Data

While I assume the Present Perfect Puzzle is as yet unsolved, the puzzle itself provides a context within which to examine AAE perfect constructions.

2.1   Inconsistent Judgments

Stated more precisely, the focus of this paper, then, is on the interaction of definite past-time denoting adverbials with AAE preverbal *done* sentences such as that in (4).

(4)   John done baked a cake   AAE
        'John has baked a cake'

Following Déchaine (1993), Dayton (1996), Terry (2000) and others, I take AAE preverbal *done* constructions to be perfects. Given this classification and the typological split introduced by the Present Perfect Puzzle, a natural question to ask is whether preverbal *done* sentences pattern with SE or with Dutch, Icelandic, Italian and German when modified by definite past-time denoting adverbials. For me, this has been a surprisingly difficult question to answer – made so by a great deal of variability in grammaticality judgments, and I leave open the possibility that in the end they may pattern with neither.

Turing to the literature on the subject, one finds that, on examining the judgments of AAE speakers in Lake Arthur, Louisiana, Green (1993) reports that preverbal *done* constructions pattern with SE present perfects; the sentences in (5) are all ungrammatical by her account.

(5)   *I done went back to visit two months ago/last weekend/yesterday   AAE
                                                                            Green (1993)

While she agrees with Green's basic judgments, Dayton (1996) is less categorical. Examining the judgments of AAE speakers in Philadelphia, Pennsylvania, she reports actual instances of AAE speakers using definite past-time denoting adverbials with *done* constructions. According to Dayton, these speakers sometimes use sentences comparable

to Green's with no loss of grammaticality. She concludes that sentences such as those in (5) are most often treated as ungrammatical, but on occasion are not as is shown in (6).

(6)   I done went back to visit two months ago/last weekend/yesterday   AAE
                                                                                cf. Dayton (1996)

For Dayton, this constitutes evidence that preverbal *done* is undergoing historical change, moving from a marker of the perfect (where patterning like SE, it resists modification by definite past-time denoting adverbials) to a marker of the perfective or simple past (where such modification poses no problem).

        My own investigation into these data reveals what at first look appears to be a remarkable inconsistency in native speaker judgments. Examining the judgments of speakers from Wise, North Carolina, I find that a speaker might judge the sentence in (7) as perfectly grammatical one day, and judge the same or a similar sentence as ungrammatical the next.

(7)   ?John done baked a cake yesterday   AAE
         'John has   baked a cake yesterday'

        Seeing this kind of variability in single-speaker judgments leads one to question Dayton's historical change account; for while it is possible that *done* is changing from a marker of the perfect to a marker of the perfective, and that this is the source of the inconsistent judgments, one does not expect to see historical change operating at the level of a single speaker. Thus, it is an unlikely explanation for the inconsistency.

        Likewise, this single-speaker variation casts doubt on explanations of the variation based on different judgments coming from different sub-varieties of AAE. As judgments are coming from different places, one might imagine that some regional varieties of AAE would pattern with SE and others pattern with languages like German when it comes to the grammaticality of sentences such as the one in (7). One would expect, however, that, for the most part, single speakers would judge these sentences using one and not both of these grammars, though grammatical interference from another variety of AAE or from SE is, of course, a possibility.

        So while we cannot absolutely rule out historical change or grammatical interference as possible explanations, neither should we rule out the possibility that by examining these out-of-the-blue judgments in isolation, one misses something important about AAE grammar that might better explain the data and that might be brought to the fore by finding ways to make the judgments sharper. In any case, sharpening the judgments would seem to be a worthwhile goal, as even if historical change or grammatical interference turns out to be the cause of the variability, speakers who use these sentences are nonetheless making synchronic judgments, and if we want to understand how they are making them, we will want sharper judgments to work with.

2.1 Sharpening the Judgments

The judgments of the speakers I have interviewed can be sharpened in two ways: First, the pre-posing of the temporal adverbial of a sentence such as (7), as shown in (8), generates clearly unacceptable sentences.

(8)   *Yesterday, John done baked a cake.   AAE

I have found no AAE speaker who considers sentences such as (8) to be grammatical. Second, leaving the adverb in the post-posed position while providing a carefully constructed context produces clearly acceptable sentences. The sentence in (7), *John done baked a cake yesterday,* is perfectly acceptable as part of the discourse in (10) when it is supported by the context in (9).

(9)   <u>Context for (10) and (11)</u>
        Mary and Sue are in a supermarket making decisions about what to buy to
        take back to the apartment where they both live with John. Mary picks
        up a banana cream pie and puts it in the cart.

(10)   Sue: You don't need to buy that pie now! John done baked a cake yesterday.
              We have plenty of sweets at home.   AAE

        'You don't need to buy that pie now! John has baked a cake; he just did it
          yesterday. We have plenty of sweets at home.'

As shown in (11), the context in (9) cannot, however, save (8) – the same sentence as (7) with the adverbial in the pre-posed position.

(11)   Sue: You don't need to buy that pie now! *Yesterday, John done baked a cake.
              We have plenty of sweets at home.   AAE

Thus we can now identify three parts to what I will call The AAE English Present Perfect Puzzle: 1) The behavior of definite past-time-denoting adverbials is different from that of other temporal adverbials in simple preverbal *done* sentences. In out-of-the-blue sentences, the former are more often than not judged unacceptable, but the judgments are not clear. 2) Pre-posing the adverbial makes these sentences clearly unacceptable. 3) Something about the context in (9) makes the sentences with post-posed adverbials clearly acceptable. The challenge is to tie these three pieces of the puzzle together in an explanatory fashion, and, ultimately, in a formal analysis. In the end, this paper falls somewhat short of that ultimate goal of formal analysis. I discuss the reasons why and what might be done about them in section 6.

3.   Putting the Pieces Together

Taking the three pieces of the AAE puzzle outlined in the previous section in reverse order, one might first ask what about the context in (9) could make sentences such as (7)

acceptable. A potential answer to this question is that the context does two things: First, adopting the terminology of Klein (1992, 1994), it makes clear that the topic time of a sentence such as *John done baked a cake yesterday* is "now". For Klein the topic time of a sentence is the time that the sentence is about. This is problematic if one does not accept that sentences are "about" times. However, the same idea can be captured by considering topic times to be focused or particularly salient intervals of time within the semantic computations of sentences. Second, in addition to setting up the topic time of the present perfect *done* construction as a present interval, the context in (9) gives a reason for additional time specification of the event described by the verb. In (7), the event occurred yesterday. This is important because of its proximity to the now.

In his seminal book, <u>Aspect</u>, Comrie (1976) identifies four types or uses of perfect constructions. They are *the perfect of recent past*, *the perfect of persistent situation*, *the perfect of result*, and *the experiential perfec*t. Here I refer specifically to the perfect of recent past. This is the use of the present perfect (instead of the simple past) to suggest the temporal closeness of an event to the now. Like SE present perfects, AAE preverbal *done* constructions have perfect of recent past readings. Compared to the simple past sentence *The Sox won the series*, the preverbal *done* sentence in (12) is the better choice if one means to say that the Sox have <u>just</u> won the series.

(12)   The Sox done won the series!
         'The Sox have (just) won the series!'

The context in (9) invites a perfect of recent past reading of the preverbal *done* construction.

Moving to the pre-posing/post-posing facts, there are, in principle, two ways that a temporal adverbial such as *yesterday* can end up in the pre-posed position shown in (8). First, the adverbial may be base-generated in that position from the start. As shown in (13), the pre-posed position, then, suggests a high attachment site for the adverb where one would expect modification of a topic time; the post-posed position, on the other hand, at least allows for a low (perhaps VP-level) attached adverb. Here one might expect additional time specification of the past event without topic-time focus.

(13)

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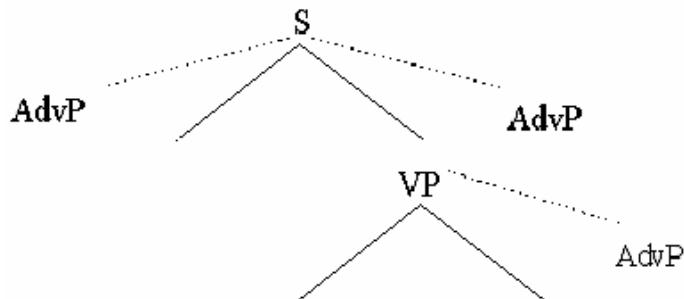
The second way an adverbial might end up in the pre-posed position is to begin as base-generated elsewhere (again, perhaps at the VP-level), and be moved to that pre-posed position by some syntactic transformation. This process is commonly referred to as 'topicalization', and it is often assumed that the movement occurs so that the adverbial can receive something like topic time focus. If, as suggested previously, the topic times of present perfect *done* sentences are present times, then specifying a past-time denoting adverbial as the topic time, either by base generating it in the pre-posed position or by topicalizing it, would be at odds with the meaning of the construction. This explanation for the unambiguous ungrammaticality of sentences such as (8), *Yesterday John done baked a cake*, has the added benefit of being consistent with and connected to the previous explanation of the force of the context in (9). It is also supported by the following facts: As shown in (14) and (15), in the post-posed position, indefinite past-time denoting adverbials such as *On a Monday* are perfectly grammatical in *done* constructions; when pre-posed, however, they, like their definite counterparts, produce ungrammatical sentences.

(14)   John done baked a cake on a Monday   AAE
        'John has baked a cake on a Monday'

(15)   *On a Monday John done baked a cake   AAE

This suggests a common reason for the ungrammaticality of sentences such as (8) and (15). The pastness of their temporal adverbials fits the bill, especially since present-time denoting temporal adverbials such as *Today* in (16) pose no problem in the pre-posed position.

(16)   Today John done baked a cake   AAE
        'Today John has baked a cake'

        The final piece of the puzzle that must be accounted for is where the discussion began – the variability in judgments of sentences such as (7), repeated here as (17).

(17)   ?John done baked a cake yesterday   AAE
        'John has   baked a cake yesterday'

How might definite past-time denoting adverbials such as *yesterday* be distinguished from indefinite adverbials such as *On a Monday* so as to account for the contrast between (17) and (13) and for this variability? Importantly, whatever the crucial property of the adverbials is, in line with the rest of the puzzle, it must be able to change with context. This would seem to rule out the most apparent differences. For instance, an appeal to definiteness as being the determining factor (as say Klein (1992) does for the SE puzzle with his P-definiteness constraint), will not work. Providing a context such as that in (9) can make (17) acceptable, but it is hard to see how it could make *yesterday* any less definite.

This situation calls to mind the kind of "packaging" discussed by Bach (1986). As an example, the mass noun *beer* may be packaged as the quantized predicate *a beer*. In such a case, what constitutes *a beer* is highly dependent on context; it might be a bottle, a can, a barrel or even a swallow. If one assumes, as is often done, that verb phases denote sets of possible events, and further, that aspectual operators convert them into sets of possible times (v. Kratzer 1998), the various parts of the African-American English Present Perfect Puzzle can be brought together in the following way: Temporal adverbials such as *yesterday*, *today*, *on Monday*, and *on a Monday* are treated as properties of times. As such, they attach above the VP-level where as previously discussed, they interact with topic times. Some AAE speakers, however, allow a contextually conditioned type-shift that can repackage these temporal adverbials as properties of events. In this form they are constrained to VP-level attachment. As a property of events, the adverbial *yesterday* can only modify a verb phrase and thus, can only add additional specification to the time of the event described by the verb in a present perfect *done* construction; it cannot modify the topic time.

At this point, a reasonable assumption would be that with the preceding informal analysis I had all of the requirements for proceeding to develop a fully formal analysis of the AAE Present Perfect Puzzle. However, as portions of that preceding analysis come into conflict with what I hold to be the semantics of AAE preverbal *done* constructions, it becomes necessary to seek a resolution of those conflicts. This compels that I revisit the basic semantics of preverbal *done* sentences in order to elucidate the key areas of conflict. I begin this task by examining the type of theory of the perfect I argue should be employed in order to capture the present perfect nature of simple preverbal *done* constructions.

4.   Theories of the Perfect

There are at least three major ways of characterizing perfect constructions that are still fervently argued for in the literature[1]. As discussed by Portner (2000) these three broad categories of analysis break down as follows: Indefinite Past Theories, Result State Theories, and Extended Now Theories. Largely following Portner's discussion without adopting his theory, I briefly highlight the main attributes of each theory type and indicate why I contend that a hybrid Indefinite Past/Result State theory should be employed to explain the present perfect nature of simple *done* constructions. From there, I show what about my particular formulation of this theory is at odds with the informal analysis of the AAE Present Perfect Puzzle that I posited.

4.1   Indefinite Past Theory

Indefinite past theories of the perfect (e.g. Montague 1973, Inoue 1979, Klein 1992) treat the core semantics of the construction as saying that the clause under the scope of the perfect is true at some past time. Take, for example, Reichenbach's (1947) treatment of what he calls the perfect tenses. Reichenbach argues that to capture the meaning of a

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[1] See McCoard (1978) for a survey of these and other theories of the perfect.

sentence such as (18), we must refer to three time periods: the event time (the time at which Marie's going to church takes place), the utterance time (the time at which the sentence is spoken), and a reference time. The reference time of (18) can be made more salient with the use of a *when*-clause as in (19). In (19), the reference time is the time of Esther's arrival.

(18)   Marie had gone to church

(19)   Marie had gone to church when Esther arrived

In past perfects such as (18) and (19) these intervals are ordered as follows: event time precedes the reference time which precedes the utterance time. The proposition *Marie go to Church* is true at an interval that precedes the reference time. The present perfect in Reichenbach's account similarly requires that the event time precede the reference time. In the case of the present perfect, however, the reference time is cotemporaneous with the utterance time.

Following Marion Johnson's (1977) analysis of tense and aspect in Kikuyu, numerous researchers such as Smith (1991) and Klein (1992, 1994) have advocated treating the relationship between event time and reference time as aspect, or viewpoint aspect in Smith's terminology, and the relationship between topic time and utterance time as tense. Adopting Klein's (1992, 1994) terminology, I refer to Reichenbach's event time and reference time as situation time and topic time, respectively.

Where advocates of indefinite past theories of the perfect face the most difficulty, and where most need to say something special, is in accounting for Comrie's perfect of persistent situation. This is the use of the perfect to describe an eventuality that starts in the past, but persists into the present. Such uses of the perfect require durational adverbials such as *for three years* in the AAE examples in (21) and (22).

(21)   a. Richard done lived here for three years   AAE
            'Richard has lived here for three years'

        b. For thee years Richard done lived here   AAE
            'For three years Richard has lived here'

Before moving to Result State Theory, there are several facts about the perfect of persistent situation and *for*-adverbials worth noting. As the sentences in (21) demonstrate, as is the case with the SE *have* construction, post-posing a *for*-adverbial in an AAE present perfect *done* construction results in an ambiguous sentence. For example, (21a) can mean either that Richard lived here for a three year period at some unspecified time in the past, say, in the 1980s, or it can have the perfect of persistent situation reading in which Richard has lived here for a three year period up to and including now (the moment the sentence is spoken). When the *for*-adverbial is moved to the pre-posed position, only the perfect of persistent situation reading is available. Also, only perfect constructions whose main verbs are either lexically stative, as in (21), or interpreted as

habituals (habituals very likely being kinds of statives) allow perfect of persistent situation readings. I will return to these facts in section 5.3.

4.2   Result State Theory

According to result state theories (e.g. Parsons 1980, Moens and Steedman 1988, Smith 1992), the core semantics of the present perfect is the assertion that a state that results from the past event indicated by the verb phrase holds at the present moment. Result state theories are on particularly strong footing when it comes to capturing Comrie's perfect of result. This is the use of the perfect when it indicates that the result of some past event still holds. For example, it is odd to speak the AAE present perfect *done* sentence in (22) if an unwashed John is standing before you. The sentence suggests a current state of John's being clean that results from his having taken a bath.

(22)   John done took a bath.   AAE
        'John has taken a bath'

It is not entirely clear, however, that this effect is semantic rather than pragmatic, and where advocates of result state theories face the most difficulty is in explaining Comrie's existential perfect – the reading of the perfect that asserts the existence of a past event with out any particular result holding, as for example, in (23).

(23)   John done ate rutabagas.   AAE
        'John has eaten rutabagas'

4.3   Extended Now Theory

Extended now analyses of the perfect (e.g. McCoard 1978, Bennett and Partee 1978, Portner 2000) say that the core meaning of the perfect places the event described by the lower verb phrase within the "extended now", an interval of time that begins in the past and extends up to and includes the utterance time. Extended now analyses are particularly good at capturing the perfect of persistent situation. Much of the most promising work on the perfect constructions in general and the present perfect puzzle in particular has been done within an extended now framework (e.g. Portner 2000, Musan 2002 , Pancheva and von Stechow 2004). My investigation into AAE perfects, however, leads me adopt a hybrid Indefinite Past/Result State analysis of them, and to seek a solution to the AAE Present Perfect Puzzle within that hybrid framework.

5   AAE Present Perfects Revisited

My basic analysis of AAE present perfects (more fully explicated in Terry 2004, and Terry 2005) focuses on their morphological make up and the commonality of an abstract *–ed* to both *done* V-ed constructions such as *John done ate rutabagas* in (23) and simple V-ed sentences such as *John ate rutabagas* in (24). As pointed out by numerous authors, what look like simple past sentences in AAE are, in fact, ambiguous between past

perfective and present perfect. Sentence (24) can mean either *John ate rutabagas* or something closer to *John has eaten rutabagas*.

(24)   John ate rutabagas

      a. 'John ate rutabagas'   OR
      b. 'John has eaten rutabagas'

                                 cf. Déchaine 1993, Dayton 1996

Characterizing the ambiguity of sentences such as (24) is a key problem in the area of AAE tense and aspect semantics – one that I believe must be solved by saying something other than that there is simply an optional "deletion" of *done* in the case of the (24b) reading of (24). This is because, as will be shown, the (24b) reading of (24) and (23) are not perfectly synonymous even though the SE present perfect is the closest translation for each.

5.1   Preverbal done Sentences as Present Perfects

There is a great deal of evidence that AAE preverbal *done* sentences are present perfects. For example, preverbal *done* sentences can be used as any of Comrie's (1976) four types of perfects – *the perfect of recent past*, *the experiential perfect*, *the perfect of result*, or *the perfect of persistent situation*. Additional evidence comes from Dahl's (1985) survey of tense, mood, and aspect. Having considered over 60 languages from a variety of language families, Dahl provides lists of prototypical occurrences (verbs and contexts) of both perfect and perfective constructions. A *done V-ed* construction can be used in all of Dahl's prototypical occurrences of the perfect, and in none of his prototypical occurrences of the perfective (v. Terry 2004).

      Additional evidence that simple *done* sentences are indeed present tensed comes from tag questions. Simple *done* sentences such as that in (25a) take *ain't* tags; they are ungrammatical when followed by *didn't or don't* tags as is shown in (25b). The *ain't he?* tag in (25a) is a reflex of present tense and not perfect aspect[2]. Sentences (26a) and (26b) show that *aint' he?* is a possible tag for a progressive sentence, but only a present progressive. Similarly (26c) and (26d) show that while *ain't he?* is the tag for present tense *done* sentences, *hadn't he*? is the tag for past tense *done* sentences (past perfects).

(25)   a. John done ate rutabagas, ain't he?   AAE
        'John has eaten rutabagas, hasn't he?'

      b. John done ate rutabagas, *didn't he/ *don't he?   AAE

(26)   a. John (is) eating, isn't/ain't he?   AAE
        'John is eating, isn't he?'

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[2] While *don't* tags in AAE might also reflect present or part of present tense, they are only compatible with generic and habitual active verbs, plus some lexical stative verbs.

b. John was eating, wasn't/ *ain't he?   AAE
   'John was eating, wasn't he?'

c. John done ate, ain't he?   AAE
   'John has eaten, hasn't he?

d. John'd done ate, hadn't he/*ain't he?[3]   AAE
   'John had eaten, hadn't he?'

Finally, what I have called the AAE Present Perfect Puzzle itself may be taken as evidence that preverbal *done* sentences are perfects. That is, by analogy to SE present perfects, the behavior of past-time denoting adverbials in simple *done* constructions may be taken as evidence that AAE preverbal *done* sentences are also present perfects.

5.2   The Ambiguity of African-American English Simple V-ed Sentences

In contrast to *done* V-ed sentences, AAE simple V-ed sentences occur in both present perfect and past perfective environments. They occur easily in all of Comrie's perfect environments except for the perfect of persistent situation with *for*-adverbials[4]. There is no reading of sentence (27b) in which Mary lives in Oxford at the time the sentence is spoken.

(27)   a. Mary done lived in Oxford for three years.   AAE
           'Mary has lived in Oxford for three years (including now)'

        b. Mary lived in Oxford for three years   AAE
        ≠ 'Mary has lived in Oxford for three years (including now)'

A simple V-ed construction can also be used in all of Dahl's (1985) prototypical occurrences of the perfect and in all of his prototypical occurrences of the perfective (v. Terry 2004).

With respect to tag questions, AAE simple V-ed sentences take both *didn't* and *ain't* tags as shown in (28). The *didn't* tag, however, is only licensed when the matrix sentence receives a past perfective interpretation, and the *ain't* tag is only licensed when the matrix sentence receives a present perfect interpretation[5].

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[3] It is not at all clear how *ain't* should be translated into SE. the ungrammaticality of the *ain't* version of (26d) seems, however, to be on par with the ungrammaticality of the SE sentence *John had eaten, hasn't he?*

[4] The data regarding *since* adverbials is less clear, and *since* adverbials may work differently.

[5] In (28) and (29), the modifiers *last night* and *before* disambiguate the contexts. They are, however, not necessary when there is sufficient contextual support.

(28)   a. John ate rutabagas (last night), didn't he?   AAE
           'John ate rutabagas (last night), didn't he?'

       b. John ate rutabagas (before), ain't he?   AAE
           'John has eaten rutabagas (before), hasn't he?'

The data in (28) argue for an ambiguity rather than vagueness in the AAE simple V-ed construction; they reveal a covert present tense in the present perfect versions of these sentences.

AAE simple V-ed sentences are not implicated in the AAE Present Perfect Puzzle. When modified by past-time denoting adverbials, they simply receive past perfective interpretations.

5.3   The Relationship Between done V-ed and Simple V-ed Sentences

The ambiguity of AAE simple V-ed sentences begs the following questions: *What is their relationship to preverbal done sentences?* and *Why do they exhibit the particular ambiguity that they do?* Déchaine (1993) answers these questions by positing a covert *done* that supplies perfect aspect in the present perfect, but not the past perfective, versions of AAE simple V-ed sentences. Comrie's classification, however, reveals that simple V-ed sentences such as (24), *John ate rutabagas,* are not semantically equivalent to their corresponding *done* V-ed sentences. Preverbal *done* sentences have perfect of persistent situation readings while simple V-ed sentences do not[6]. Thus, the ambiguity of sentence (24), for example, cannot be explained by saying that it is simply sentence (23), *John done ate rutabagas*, with a covert *done.* Following Terry (2004, 2005), I argue for a different account for this ambiguity – one that offers different answers to the questions posed at the beginning of this section than those given by Déchaine. Crucially, my account relies on a hybrid Indefinite Past/ Result State theory of the present perfect. Acceptance of my particular formalization of this account is at odds with the most natural ways to formalize the informal analysis of the AAE Present Perfect Puzzle proposed in section 3. It remains to be seen to what extent the two positions can be reconciled.

Having concluded that a silent *done* is not the source of perfect aspect in present perfect simple V-ed sentences, I argue that the source of perfect aspect in both simple V-ed sentences (on their present perfect readings) and *done* V-ed sentences is the *–ed* morphology common to both constructions.

Based largely on Klein (1992, 1994) and Kratzer (1998), I assume the following inventories of tenses and aspects. I take present tense to be the relation *topic time included in utterance time* and past tense to be the relation *topic time precedes utterance time.* I assume this is true for both AAE and SE. As with the tenses, I assume that the basic inventory of aspects in both SE and AAE is the same. This inventory comprises

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[6] See Terry (2004) for more differences between simple V-ed and *done* V-ed constructions.

progressive (*situation time includes topic time*), perfective (*situation time included in topic time*) and perfect aspect (*situation time before topic time*).

When perfect aspect is treated as an indefinite past, as in the definitions above, both past tense and perfect aspect contain the notion of precedence. Past tense indicates that a sentence's topic time precedes its utterance time, and perfect aspect indicates that its situation time precedes its topic time. Therefore, I treat the meaning of the –*ed* morphology argued to carry perfect aspect, as simply precedence; thus, explaining why it appears in both past perfective and present perfect sentences (cf. partly similar ideas in Stowell 1996). Positioned below the covert present tense revealed by the tag question data in section 5.2, -*ed* relates the topic time to the utterance time, and is interpreted as perfect aspect; when it is the highest tense/aspect marker in the sentence, it is interpreted as past tense.

For such a system to work, we must, syntactically speaking, separate the utterance time from tense morphology. To this end, I allow a sentence-level assertion operator to both introduce the utterance time and assert the existence of the eventuality introduced by the verb. The formulas in section 6 require an assertion operator to existentially bind the eventuality variable of the verb phrase.

I now turn to the role of *done*. As noted in section 4.2, only perfect constructions whose main verbs are either lexically stative or interpreted as habituals (habituals very likely being kinds of statives) allow perfect of persistent situation readings. So, stativity plays a role in the perfect of persistent situation. Following Kamp and Ryle (1993), who argue that SE *have* introduces stativity into present perfect constructions, I argue that *done* introduces a resultant state into the semantic computations of the sentences in which it occurs. A resultant state is the state of having done something (v. Parsons 1980). Consider again example (21a), *Richard done lived here for three years*, and (21b), *for three years Richard done lived here*. Recall that (29a) is ambiguous between a reading in which the three year period of Richard's living here occurred at some time wholly in the speaker's past, and the perfect of persistent situation reading in which it extends to the moment the sentence is uttered. In both readings the *for*-adverbial seems to measure the length of a state. But as Kamp and Reyle (1993) note for SE, in the case of the perfect of persistent situation reading, it is difficult to determine which state the *for*-adverbial measures, the state introduced by the verb or the resultant state they suggest is introduced by *have* and I extend to *done*. This difficulty arises because although the resultant state of an event starts at the moment that the event culminates, the resultant state of a state (the state of having been in that state) starts at the moment the state starts. Ultimately, Kamp and Reyle conclude that when the SE counterparts to sentences such as (29) are given perfect of persistent situation readings, their *for*-adverbials do, in fact, measure out the state introduced by the verb. They reach this conclusion based on the fact that *for*-adverbials never seem to measure the lengths of the resultant states of eventive predicates. There is, for instance, no reading of *Mary has eaten beans for half an hour* in which Mary has been in a state of having eaten beans for a half hour. That is, *Mary has eaten beans for half an hour* never means *Mary ate beans half an hour ago*. This fact leads Kamp and Reyle to locate the source of the ambiguity in sentences such as *Richard*

has lived here for three years in the perfect construction itself. They stipulate two kinds of perfects: one in which the state indicated by the verb phrase extends into the utterance time, and one in which it does not. Instead, I offer a way out based on a formalization of *done* as a state transforming operator that when applied to an eventive predicate picks out a resultant state, and when applied to a stative predicate is vague; it picks out either the resultant state or the state indicated by the lower verb. In addition, I place a constraint on *for*-adverbials that prohibits them from modifying resultant states.

In the section that follows, I formalize the ideas just presented[7], and discuss the tension between their formalization and the intuitions toward formalization presented in section 3.

6 Tensions in Formalization

In the discussion that follows, I assume the following semantics types, variables and constants. Types: i = time intervals, t = truth values, e = eventualities, w = worlds; Variables: e = events, s = states, t = times (t^0: utterance time), w = worlds (w^0: actual world); Constants: j = John, m = Mary, r = rutabagas, a = Amherst. I simplify the definite description *the rutabagas* to a definite description for expository purposes only.

A key consideration in the formalization of the ideas developed in 5.3, is the kind of denotation given uninflected verb phrases (VPs). I take VPs to denote relations between eventualities, time intervals which include those eventualities, and worlds which include those intervals (c.f. Delfitto and Bertinetto 2000). The denotations for the VPs *John eat the rutabagas* and *Mary live in Amherst* are given in (31) and (32), respectively.

(31)   [[*John eat the rutabagas*]] = $\lambda e_e \lambda t_i\, \lambda w_w[\text{eat}(j)(r)(e)(t)(w)]$

(32)   [[*Mary live in Amherst*]] = $\lambda s_e \lambda t_i\, \lambda w_w[\text{live}(m)(a)(s)(t)(w)]$

As can be seen by examining their denotations in (33) and (34), (the relational part of) present tense (PRES), and *–ed* morphology have the same semantic type as uninflected VPs. This is what allows *-ed* to perform its dual roles as ingredient of tense and ingredient of aspect. As shown by the computations in (35) and (36), it can either attach to a VP as the highest tense/aspect operator in a sentence, as in (35); or, as in (36), it can be positioned below present tense (which itself must be able to attach directly to a VP in a simple present sentence). In the first case, *-ed* relates a topic time (set up directly as an argument of the VP) to the utterance time, and is therefore interpreted as part of the past tense relation. When present tense is the highest tense/aspect operator, as in (36), *-ed* relates a situation time (again, set up directly as an argument of the VP) to a topic time. In this case, it is interpreted as a part of the perfect aspect relation.
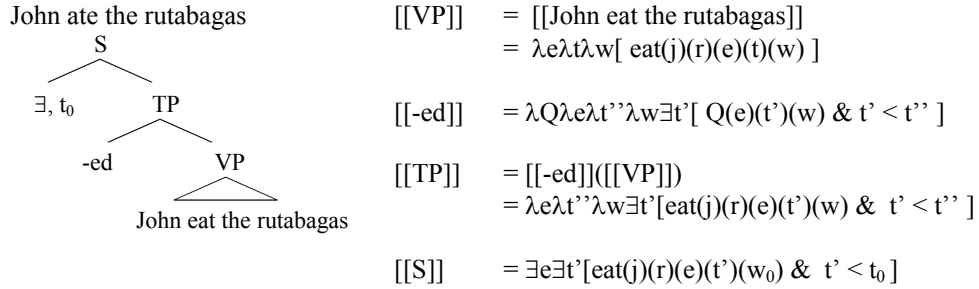
(33)   [[PRES]] = $\lambda Q_{<e<i<wt>>>}\lambda e_e\lambda t_i'''\lambda w_w\,[Q(e)(t'')(w)\ \&\ t'' \subseteq t''']$

(34)   [[*-ed*]] = $\lambda Q_{<e<i<wt>>>}\lambda e_e\lambda t_i''\lambda w_w\,[\,Q(e)(t')(w)\ \&\ t' < t'']$

---

(35)   Computation for *John ate the rutabagas* (Past Perfective)

John ate the rutabagas
        S
  ╱‾‾‾‾‾╲
∃, t₀   TP
        ╱‾‾‾‾‾╲
    -ed   VP
            ╱‾‾‾‾‾╲
        John eat the rutabagas

[[VP]]   = [[John eat the rutabagas]]
          = $\lambda e \lambda t \lambda w[\ eat(j)(r)(e)(t)(w)\ ]$

[[-ed]]   = $\lambda Q \lambda e \lambda t''\lambda w \exists t'[\ Q(e)(t')(w)\ \&\ t' < t''\ ]$

[[TP]]   = $[[-ed]]([[VP]])$
          = $\lambda e \lambda t''\lambda w \exists t'[eat(j)(r)(e)(t')(w)\ \&\ t' < t''\ ]$

[[S]]   = $\exists e \exists t'[eat(j)(r)(e)(t')(w_0)\ \&\ t' < t_0\ ]$

(36)   Computation for *John ate the rutabagas* (Present Perfect)

John ate the rutabagas
        S
  ╱‾‾‾‾‾╲
∃, t₀   TP
        ╱‾‾‾‾‾╲
    PRES   AspP
            ╱‾‾‾‾‾╲
        -ed   VP
                ╱‾‾‾‾‾╲
            John eat the rutabagas

[[VP]]   = [[John eat the rutabagas]]
          = $\lambda e \lambda t\ \lambda w[eat(j)(r)(e)(t)(w)]$

[[-ed]]   = $\lambda Q \lambda e \lambda t'\ \lambda w \exists t[Q(e)(t)(w)\ \&\ t < t']$

[[AspP]] = $[[-ed]]([[VP]])$
          = $\lambda e \lambda t'\ \lambda w \exists t[eat(j)(r)(e)(t)(w)\ \&\ t < t']$

[[PRES]] = $\lambda Q \lambda e \lambda t''\lambda w \exists t'[Q(e)(t')(w)\ \&\ t' \subseteq t'']$

[[TP]]   = $[[PRES]]([[AspP]])$
          = $\lambda e \lambda t''\lambda w \exists t'[\exists t[eat(j)(r)(e)(t)(w)\ \&\ t < t']\ \&\ t' \subseteq\ t'']$

[[S]]   = $\exists e \exists t'[\exists t[eat(j)(r)(e)(t)(w_0)\ \&\ t < t']\ \&\ t' \subseteq t_0]$
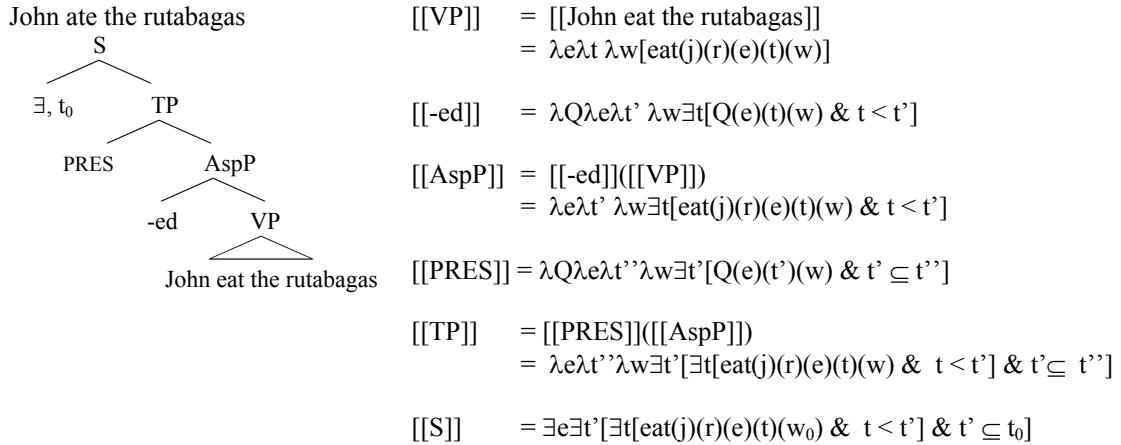
The uniform types of (33) – (36) pose a problem for formalizing the informal analysis of the AAE Present Perfect Puzzle presented in section 3. There, it was critical to have a type difference between the VP node and higher nodes in the syntactic tree in order to constrain adverbial attachment. Here it seems equally critical that the types allow PRES to combine with both uninflected and inflected VPs. A resolution to the apparent conflict might be to simply allow AAE PRES to type-shift in appropriate circumstances. This would not, however, be a simple type shift from a property of times to a property of events; the need to keep times out of the VP denotation would force PRES, when (and only when) it attaches directly to the VP, to do the job of converting properties of events into properties of times. The additional semantic machinery that would need to be added to the VP denotation in those circumstances calls into question the naturalness of such a type shifting operation.

My proposed denotation for preverbal *done,* given in (37), also poses problems for the formalizing the analysis in section 3.

$$(37) \quad [[done]] = \lambda Q_{<e<i<wt>>>}\lambda s_e\lambda t_i{''}\lambda w_w\forall w_w{'}\forall t_i{'}\exists e_e[\ [Q(e)(t{'})(w{'}) \leftrightarrow$$
$$hold(s)(t{'})(w{'})] \ \& \ hold(s)(t{''})(w)]$$

The meat of (37) is the bi-conditional relationship $[Q(e)(t{'})(w{'}) \leftrightarrow hold(s)(t{'})(w{'})]$. The *done* function takes as its argument an *–ed* marked predicate, Q, whose denotation appears as the left hand side of the bi-conditional. When the predicate's verb is eventive, $Q(e)(t{'})(w{'})$ says that an event took place before time t' in world w'. According to the bi-conditional, this implies that a state s holds at t' in w', and that the state s holds at t' in w' implies that the event took place. Because t' and w' are each bound by a universal quantifier, this relationship is necessary. That is, the state s is the state that comes into being once the event has culminated in all possible worlds. The state s is a corresponding property of the predicate Q. Conjoining $[Q(e)(t{'})(w{'}) \leftrightarrow hold(s)(t{'})(w{'})]$ with $[hold(s)(t{''})(w)]$ and leaving t'' and w outside of the scope of universal quantification makes it possible for *done* to combine with present tense and for *done* sentences to assert that an event's resultant state holds at the utterance time.

The computation for the lexically stative sentence *Mary done lived in Amherst* is given in (38).

(38)   Computation for *Mary done lived in Amherst*
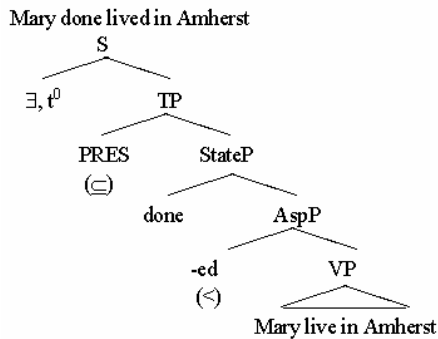
$$[[VP]] = [[Mary\ live\ in\ Amherst]]$$
$$= \lambda s\lambda t\lambda w\ [live(m)(a)(s)(t)(w)]$$

$$[[-ed]] = \lambda Q\lambda s\lambda t{'}\lambda w[Q(s)(t{'})(w)\& t< t{'}]$$

$$[[AspP]] = [[-ed]]([[VP]])$$
$$= \lambda s\lambda t{'}\lambda w[live(m)(a)(s)(t)(w)\ \&\ t<t{''}]$$

$$[[done]] = \lambda Q\lambda s{'}\lambda t{''}\lambda w\forall w{'}\forall t{'}\exists e[\ [Q(e)(t{'})(w{'}) \leftrightarrow hold(s{'})(t{'})(w{'})]$$
$$\&\ hold(s{'})(t{''})(w)]$$

$$[StateP]] = [[done]]([[AspP]])$$
$$= \lambda s\lambda t{''}\lambda w\forall w{'}\forall t{'}\exists s\ [\ [\ [live(m)(a)(s)(t)(w{'})\ \&\ t<t{'}] \leftrightarrow$$
$$hold(s{'})(t{'})(w{'})]\ \&\ hold(s{'})(t)(w)]$$

$$[[PRES]] = \lambda Q\lambda s{'}\lambda t{'''}\lambda w\ [Q(s{'})(t{''})(w)\ \&\ t{''} \subseteq t{'''}]$$

$$[[TP]] = [[PRES]]([[StateP]])$$
$$= \lambda s{'}\lambda t{'''}\lambda w\forall w{'}\forall t{'}\exists s\ [\ [\ [live(m)(a)(s)(t)(w{'})\ \&\ t<t{'}] \leftrightarrow$$
$$hold(s{'})(t{'})(w{'})]\ ]\&\ hold(s{'})(t{''})(w)\ \&$$
$$t{''} \subseteq t{'''}]$$

$$[[S]] = \exists s\forall w{'}\forall t{'}\exists e\ [\ [\ [live(m)(a)(s)(t)(w{'})\ \&\ t<t{'}] \leftrightarrow$$
$$hold(s)(t{'})(w{'})]\ \&\ hold(s{'})(t{''})(w^0)\ \&$$
$$t{''} \subseteq t^0]$$

The role of *done* is to introduce a resultant state; but what might it mean to be the resultant state of a state? Once Mary's state of living in Amherst ends, once she moves to Durham, for instance, she is in a state of having lived in Amherst. But do in-progress states have resultant states? At any moment during Mary's state of living in Amherst, she is in a state of having lived in Amherst. The "resultant state" of an in-progress state, if

there is such a thing, can be identified with the state itself. While Mary's state of living in Amherst is still in progress, $\forall w' \forall t' \exists s \, [[[live(m)(a)(s)(t)(w') \& t < t'] \leftrightarrow hold(s')(t')(w')]$ is trivially true. Once Mary's state of living in Amherst ends, however, we have two distinct states: the state that ended, and the state of having been in that state, which goes on forever.
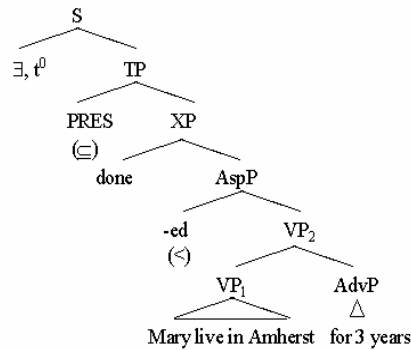
Consider now the sentences *Mary has lived here for three years* and *For three years Mary has lived here.* I assume that *for three years* has the denotation in (39), and use it in the computations in (40) and (41).

(39)　[[for three years]] $\lambda Q_{<e<i<wt>>>} \lambda s_e \lambda t_i \lambda w_w [Q(s)(t)(w) \& for\_3\_years(s)]$

The computation in (40) results in the formula $\exists s \forall w' \forall t' \exists e \, [\, [\, [live(m)(a)(s)(t)(w') \& for\_3\_years(s)] \& t < t' \,] \leftrightarrow hold(s)(t')(w')] \& hold(s')(t'')(w^0) \& t'' \subseteq t^0]$ which asserts that the resultant state of Mary's state of living in Amherst for three years holds now. The state introduced by *done* is not modified by the *for*-adverbial.

(40) Computation for *Mary done lived here for three years.*

Mary done lived in Amherst for 3 years

```
                    S
         _____/  _____
      ∃, t⁰              TP
                    ____/  \____
                 PRES          XP
                  (⊆)      ___/  \___
                         done       AspP
                               ____/  \____
                             -ed          VP₂
                             (<)      ___/  \___
                                    VP₁        AdvP
                                 __/  \__        △
```

Mary live in Amherst　for 3 years

$[[VP_1]] = [[\text{Mary live in Amherst}]]$
$= \lambda s \lambda t \lambda w \, [live(m)(a)(s)(t)(w)]$

$[[AdvP]] = \lambda Q \lambda s \lambda t \lambda w [Q(s)(t)(w) \& for\_3\_years(s)]$

$[[VP_2]] = [[AdvP]]([[VP_1]])$
$= \lambda s \lambda t \lambda w \, [live(m)(a)(s)(t)(w) \& for\_3\_year(s)]$

$[[\text{-ed}]] = \lambda Q \lambda s \lambda t' \lambda w [Q(s)(t')(w) \& t < t']$

$[[AspP]] = [[\text{-ed}]]([[VP_2]])$
$= \lambda s \lambda t' \lambda w [live(m)(a)(s)(t)(w) \& for\_3\_years(s) \& t < t'']$

$[[done]] = \lambda Q \lambda s' \lambda t'' \lambda w \forall w' \forall t' \exists e [\, [Q(e)(t')(w') \leftrightarrow hold(s')(t')(w')] \& hold(s')(t'')(w)]$

$[StateP]] = [[done]]([[AspP]])$
$= \lambda s \lambda t'' \lambda w \forall w' \forall t' \exists s \, [\, [\, [live(m)(a)(s)(t)(w') \&$
$for\_3\_years(s) \& t < t'] \leftrightarrow$
$hold(s')(t')(w')] \& hold(s')(t)(w)]$

$[[PRES]] = \lambda Q \lambda s' \lambda t''' \lambda w [Q(s')(t'')(w) \& t'' \subseteq t''']$

$[[TP]] = [[PRES]]([[StateP]])$
$= \lambda s' \lambda t''' \lambda w \forall w' \forall t' \exists s \, [\, [\, [live(m)(a)(s)(t)(w') \&$
$for\_3\_years(s) \& t < t'] \leftrightarrow$
$hold(s')(t')(w')]] \& hold(s')(t'')(w) \&$
$t'' \subseteq t''']$

$[[S]] = \exists s \forall w' \forall t' \exists e \, [\, [\, [live(m)(a)(s)(t)(w') \& for\_3\_years(s)] \&$
$t < t'] \leftrightarrow hold(s)(t')(w')] \& hold(s')(t'')(w^0)$
$\& t'' \subseteq t^0]$

The computation in Figure (41) results in the formula $\exists s'\forall w'\forall t'\exists s$ [[[live(m)(a)(s)(t)(w') & t < t'] $\leftrightarrow$ hold(s)(t')(w')] & hold(s')(t'')(w^0) & t''$\subseteq$ t^0 & for_3_years(s)]. Here the *for*-adverbial does modify the state that *done* introduces. Thus, for the sentence to be grammatical the state cannot be resultant state; it must be identified with the state introduced by the verb phrase. This formula differs from the previous one, however, in that it requires that Mary's state of living in Amherst hold at the utterance time. So, the perfect of persistent situation readings of *done* sentences can be explained in terms of the stativity of the construction[8].

(41)   Computation for *For three years Mary done lived in Amherst*
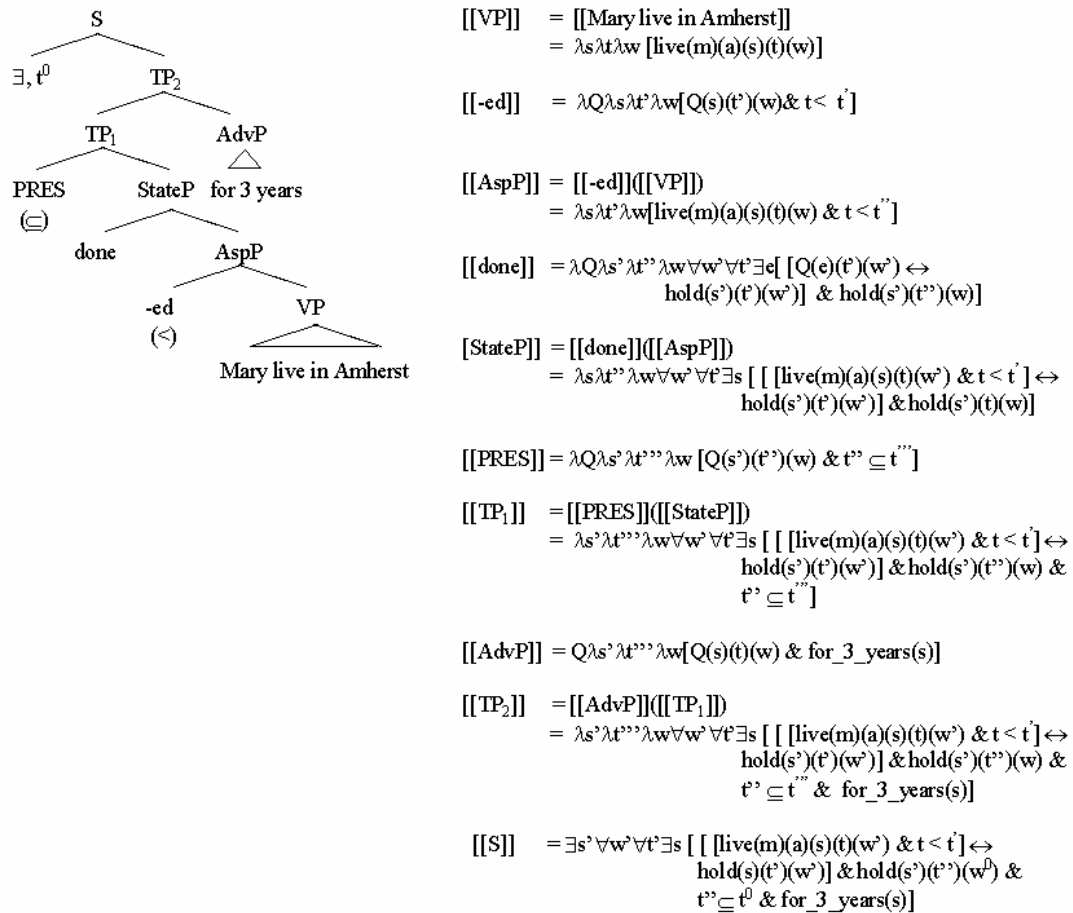
While perfect of persistent situation readings receive an explanation, the analysis from section 3 suffers yet again. The problem is that just as *done* introduces a potential attachment site for durational adverbials, it introduces a potential attachment site for temporal adverbials such as *yesterday*, *today* and *tomorrow*, creating further type problems.

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[8] A number of explanations have been advanced for the perfect of persistent situation in SAE. See, for example, Hitzeman (1997).

6 Conclusion

In this paper, I identified thee parts of what I refer to as the African-American English Present Perfect Puzzle. They are 1) The behavior of definite past-time-denoting adverbials is different from that of other temporal adverbials in simple preverbal *done* sentences. In out-of-the-blue sentences, the former are more often than not judged unacceptable, but the judgments far from clear. 2) Pre-posing the adverbial makes these sentences clearly unacceptable, and 3) Proper context can make the sentences with post-posed, but not pre-posed, adverbials acceptable. The goal set forth was to tie these three pieces of the puzzle together in an explanatory fashion, the gold standard of which is a formal analysis.

In attempting to reach the ultimate goal of formal analysis, I encountered the problem of reconciling my intuition towards a formal analysis with the analysis of *done* constructions and *–ed* morphology outlined in Terry (2004, 2005). I still believe that such reconciliation may be possible. If, however, a happy synthesis of the two analyses cannot be found, solving the puzzle may involve rethinking the kind of "packaging" I argue accounts for the contextual sensitivity of temporal adverbs when modifying *done* constructions; or, more fundamentally, it may involve rethinking the workings of *done* constructions and AAE tense/aspect morphology.

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