The Tlingit Decessive and 'Discontinuous Past':
The Curious Implicatures of Optional Past Tense [1]

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ABSTRACT:

Some languages appear to have a morpheme that combines the meaning of past tense with a variety of additional implications, the nature of which depend upon the aspectual marking of the verb. For non-perfective verbs (imperfective, habitual, future, *etc.*), the additional implication is that the event/state in question fails to extend into the present. For perfective verbs, however, the additional implication is either that (i) the result state of the event fails to extend into the present, or (ii) some natural, expected consequence of the event failed to occur. Prior authors have viewed these additional inferences as semantic in nature, as being encoded directly in the lexical semantics of the morpheme (Leer 1991; Copley 2005; Plungian & van der Auwera 2006). Under this view, the morphemes in question express a special category of tense, one that has been labeled 'discontinuous past' by Plungian & van der Auwera (2006). Through in-depth investigation of one such 'discontinuous past' marker in the Tlingit language, I argue that – to the contrary – the special inferences of these morphemes are not semantic, and are instead defeasible pragmatic inferences. Consequently, putative instances of 'discontinuous past' are in their semantics simply past tenses. I provide a formalized analysis of the pragmatic inferences associated with these past tenses, whereby they ultimately follow from (i) the optionality of the tense markers in question, and (ii) a special principle relating to the inherent topicality of the utterance time. The empirical and analytic results align well with a restrictive theory of cross-linguistic variation in tense semantics, one where the 'traditional' categories of PAST, PRESENT, and FUTURE are the only ones representable in human language (Cable 2013).

KEYWORDS:
Tlingit, tense, semantics, typology, discontinuous past, cessation implicature

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1.   Introduction: The Tlingit 'Decessive' and 'Discontinuous Past'

This paper seeks to advance understanding of cross-linguistic variation in tense semantics by investigating an alleged subspecies of past tense marking that has been reported for numerous languages across the world. Following Plungian & van der Auwera (2006), I will refer to these morphemes as markers of 'discontinuous past'. However, I will also argue that such a label is merely a descriptive convenience. That is, I will argue that these morphemes are, in their semantics, simply markers of past tense, and that the additional content they have been reported to contribute is a pragmatic effect arising from (i) the optionality of the past tense markers in question, and (ii) a general principle relating to the topicality of Utterance Time.

Although this analysis is put forth for all alleged cases of 'discontinuous past', the evidence for it will principally come from the discontinuous past marker of Tlingit, a Na-Dene language indigenous to Alaska, British Columbia, and the Yukon. By way of brief summary, this verbal morphology, referred to by language specialists as 'the decessive (epi-)mode' (Leer 1991), appears to make a two-fold contribution to the meaning of the sentence.

(1)   **The Two-Fold Meaning of the Tlingit Decessive**

      a.   <u>Past Tense:</u>   *The event/state held prior to the utterance time*, AND

      b.   (i)   <u>Cessation:</u>   *The event/state does not extend into the utterance time*, OR

              (ii)   <u>Cancelled / Unexpected Result:</u>
                      1.   *The result of the event does not extend into the utterance time*, OR
                      2.   *Some natural consequence of the event failed to occur*

As stated in (1a) and illustrated in (2)-(3) below, the first contribution of the Tlingit decessive is past tense; roughly speaking, the marking indicates that the event/state held in the past. The second contribution, however, depends upon what other tense/aspect/mood (TAM) marking is born by the verb. As shown in (2), with non-perfective verbs – that is, with verbs bearing imperfective, habitual, future, or 'potential' morphology – the decessive is reported to indicate that the event/state in question held in the past, *but does not extend into the present*. As indicated in (1bi), I refer to this additional contribution of the decessive as a 'cessation implication'. **[2]**

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[2] In this article, I provide only the roughest of glosses for individual Tlingit words, which can be morphologically quite complex. This simplification is most radical for verbs, as I provide glosses only for their lexical content, their agreement morphology, and their TAM morphology. Readers with an interest or background in Tlingit morphology should note that the order of elements in the gloss mirrors the order of their morphological exponents in the verb.

      Throughout this paper, I employ the following glossing abbreviations: 1, 'first person'; 2, 'second person'; 3, 'third person'; AUX, 'auxiliary verb'; DEC, 'decessive'; DET, 'determiner'; DisP, 'discontinuous past'; DUB, 'dubitative'; EMPH, 'emphatic'; EXCLM, 'exclamative'; FOC, 'focus particle'; FUT, 'future'; HAB, 'habitual'; HYPO, 'hypothetical/subjunctive particle'; IMPFV, 'imperfective'; Indef, 'indefinite'; INF, 'infinitival'; INST, 'instrumental'; LOCP, 'locative predication suffix'; NEG, 'negation'; NFUT, 'non-future'; NOM, 'nominalizer'; O, 'object'; OPT, 'optative'; PERF, 'perfect'; PFV, 'perfective'; pl, 'plural'; POSS, 'possessor'; POT, 'potential'; PRES, 'present'; PST, 'past'; Q, 'question/indefinite particle'; RECIP, 'reciprocal'; REFL, 'reflexive'; S, 'subject'; REL, 'relative clause marker'; sg, 'singular'; SUB, 'subordinate clause suffix'.

(2)   **The Tlingit Decessive with Non-Perfective Verbs: Cessation Implication**

     a.   K̲uwak'éi.   b.   K̲uk'éi**yeen**.
           IMPFV.good.weather   **IMPFV**.good.weather.**DEC**
           The weather is/was nice.   *The weather was nice (but turned bad)*
           (Leer 1991: 464)

With perfective verbs, though, the contribution of the decessive is rather different, and again splits two ways. First, as shown in (3a), the decessive can be interpreted to mean that *some state resulting from the (past) event* fails to extend into the present. As indicated in (1bii), I will refer to such a contribution as a 'cancelled result implication'. However, as shown in (3b), the decessive with a perfective verb can also be taken to mean that *some expected/natural consequence of the (past) event* never occurred. As stated in (1bii), I will refer to this third type of contribution as an 'unexpected result implication'.

(3)   **The Tlingit Decessive with Perfective Verbs**

     a.   <u>Cancelled Result Implication:</u>
           I   tláa   áwé   x̲washáa**yin**.
           your   mother   FOC   3sgO.**PFV**.1sgS.marry.**DEC**
           I married your mother (but we're not married any more)   (Leer 1991: 468)

     b.   <u>Unexpected Result Implication</u>
           Du x̲'éis   áwé   weit'át   x̲walawaas**ín**.
           his mouth.for FOC that.thing   3O.**PFV**.1sgS.roast.**DEC**
           I roasted that for him (but he didn't want to eat it).   (Leer 1991: 469)

As curious as the facts in (2)-(3) might at first appear, the Tlingit decessive is by no means unique in exhibiting this behavior. Indeed, as extensively documented by Plungian & van der Auwera (2006), morphemes with the exact same pattern of effects as in (1) have been widely reported in the descriptive literature, particularly for languages of North America, West Africa, and Oceania. Looking across such cases, Plungian & van der Auwera propose the existence of a special tense category, which they dub 'discontinuous past', and which (in their own terms) would have the defining properties in (4).

(4)   **The Category of 'Discontinuous Past' (Plungian & van der Auwera 2006: 323-325)**
     Verbal markers that, in addition to 'past reference', make the following contributions to imperfective and perfective verbs, respectively:

     a.   <u>Framepast (with Imperfective Verbs [including habituals, future, modals])</u>
           Situation is of "limited duration", and does not extend up to the moment of speech

     b.   <u>Cancelled Result (with Perfective Verbs)</u>
           The non-existence of a consequent state at the moment of speech, or its "current irrelevance."

Although they do not discuss the Tlingit decessive, it is clear from their discussion that Plungian & van der Auwera (2006) would indeed view this morpheme as an instance of 'discontinuous past'. Besides the clear similarity between the definitions in (1) and (4), the many examples of discontinuous past detailed by Plungian & van der Auwera (2006) show clear parallels with the Tlingit data in (2)-(3). For example, the Wolof suffix *–(w)oon* in (5) yields a cessation implication when combining with non-perfectives (5a), and a cancelled result implication when combining with perfective verbs (5b).

(5)   **Example of Discontinuous Past: Wolof *–(w)oon***

      a.   Cessation Implication with Imperfective (Habitual) Verbs [3]

            (i)   di naay   jàng
                  1sgS.**IMPFV.HAB**   study
                  I study.   (Plungian & van der Auwera 2006: 331)

            (ii)   d**oon** naay   jàng
                  1sgS-**IMPFV.HAB.DisP**   study
                  I used to study (at that time). (Plungian & van der Auwera 2006: 331)

      b.   Cancelled Result Implication with Perfective Verbs
            (i)   dem na   (ii)   dem-**oon** na
                  go.**PFV**.3sgS   go.**DisP**.**PFV**.3sgS
                  S/he has gone.   *S/he has gone (but is back)* [4]
                  (Plungian & van der Auwera 2006: 332)

      Beyond the work of Plungian & van der Auwera (2006), a few other instances of discontinuous past make appearances in the formal semantic literature (though they are not recognized as such). Most notably, Copley (2005) provides in-depth description and analysis of the marker *cem* in Tohono O'odham. As is clear from data like (6), Tohono O'odham *cem* would appear to be another case of discontinuous past.

(6)   **Example of Discontinuous Past: Tohono O'odham *cem* (Copley 2005)**

      a.   Cessation Implication with Imperfective Verbs
            Howij   'o   **cem**   suam
            banana   AUX.**IMPFV DisP** yellow
            The banana was yellow (but is now black).   (Copley 2005: 8)

      b.   Cancelled / Unexpected Result Implication with Perfective Verbs
            Huan   'at   **cem** ku:pio g   pualt.
            Juan   AUX.**PFV**   **DisP** open DET   door
            Juan opened the door in vain (i.e., it closed back again)   (Copley 2005: 10)

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[3] See (10) below for parallel example of a decessive habitual in Tlingit.

[4] The translations of these sentences are Plungian & van der Auwera's (2006). I will return in Section 6.2 to the question of whether these verb forms are properly labeled 'perfective' or 'perfect'.

We should also note here the interesting case of the Russian particle *bylo*, as described and analyzed by Kagan (2011). Although *bylo* can only combine with perfective verbs, its contribution to such verbs is again very similar to that of a discontinuous past marker.

(7)   **Possible Example of Discontinuous Past: Russian *Bylo* (Kagan 2011)**

<u>Cancelled / Unexpected Result Implication with Perfective Verbs</u>
Lena   otkryla   **bylo**   okno,   no   tut   ze   snova ego   zakryla.
Lena   open.**PFV**   **DisP(?)** window but   immediately   again   it   closed
Lena opened the window, but closed it again at once.   (Kagan 2011: 60)

Whether Russian *bylo* should in fact be viewed as the same phenomenon as in (2)-(6) will remain a question for future research; as we will see later (Section 4; footnote 22), there are some ways in which it behaves differently from the Tlingit decessive and Tohono O'odham *cem*. Nevertheless, it is mentioned here as an important related case.

It appears, then, that some languages have a special subspecies of past tense marking, 'discontinuous past', which exhibits the characteristic semantic effects in (1). I will argue, however, that appearances here are rather deceiving. That is, I will argue that morphemes exhibiting the behavior in (1) are in their semantics simply past tense markers; only (1a) is part of their conventionalized, lexical meaning. I will present evidence that the additional contributions in (1b) are defeasible pragmatic effects, and I will develop a formal analysis deriving those effects from independent features of these languages – chiefly, the *optionality* of the past markers in question. This analysis will build upon recent work by Altshuler & Schwarzschild (2013, 2014) on so-called 'cessation implicatures' in languages like English, but we will also see that the effects summarized in (1b) are not straightforward cases of English-style cessation implicatures. Under the proposed analysis, though, there is in fact no separate subcategory of 'discontinuous past' in human language. This result nicely aligns with recent evidence that the only true tenses across natural language are PAST, PRESENT, FUTURE, and that apparent subspecies of past (and future) tense are not actually 'tenses' in the technical sense assumed by most semanticists (Cable 2013).

The remainder of this paper is structured as follows. The first four sections provide the reader with crucial background to the core empirical and analytic sections of the paper. In Section 2, I provide some basic background concerning the Tlingit language and the nature of the Tlingit language data presented here. In Section 3, I provide more detailed background concerning the form and function of the Tlingit decessive, and I review in some greater depth the work of Plungian & van der Auwera (2006). I also in this section detail the ways in which the cessation implication of the Tlingit decessive (1bi) does not appear to be a mere cessation implicature of the kind found with English past tense (Altshuler & Schwarzschild 2013). Following this, Section 4 critically discusses Copley's (2005) semantic analysis of Tohono O'odham *cem* (6) and the related work by Kagan (2011) on Russian *bylo* (7).

With this background in place, Section 5 presents the paper's main empirical arguments against the semantic description in (1). That is, I show here that the additional implications in (1b) are defeasible, and are absent in the following cases: (i) when the speaker explicitly asserts ignorance concerning the present, (ii) when the decessive-marked verb appears embedded below another decessive-marked verb, (iii) when the utterance time is clearly not relevant to the discourse. Although facts (i) and (iii) are documented only for the Tlingit decessive, I also point

out cases of (ii) in the work of Plungian & van der Auwera (2006). In addition, I present a typological argument against the existence of a separate category of 'discontinuous past', based on the striking fact that every putative case of discontinuous past appears in a language with optional past tense marking.

The facts presented in Section 5 indicate that alleged instances of discontinuous past are, in their semantics, simply optional past tense markers. This raises the question of how these markers could come to trigger the inferences in (1b). In Section 6, I present my proposed analysis of the semantics and pragmatics of these tense markers, where the implications in (1b) stem from a variety of independent factors, especially (i) the optionality of tense marking in these languages and (ii) a general principle relating to the topicality of Utterance Time.

2.   Linguistic and Methodological Background

The Tlingit language (Lingít; /ɬìn.kít/) is the traditional language of the Tlingit people of Southeast Alaska, Northwest British Columbia, and Southwest Yukon Territory. It is the sole member of the Tlingit language family, a sub-branch of the larger Na-Dene language family (Campbell 1997, Mithun 1999, Leer *et al.* 2010). It is thus distantly related to the Athabaskan languages (e.g., Navajo, Slave, Hupa), and shares their complex templatic verbal morphology (Leer 1991). As mentioned in Footnote 2, I will largely be suppressing this complex structure in my glossing of Tlingit verbs.

Tlingit is a highly endangered language. While there has been no official count of fully fluent speakers, it is privately estimated by some that there may be less than 200 (James Crippen (Dzéiwsh), Lance Twitchell (X̱'unei), p.c.). Most of these speakers are above the age of 70, and there is no known native speaker below the age of 50 (Dauenhauer & Dauenhauer 1987). There are extensive, community-based efforts to revitalize the language, driven by a multitude of Native organizations and language activists too numerous to list here. Thanks to these efforts, some younger adults have acquired a significant degree of fluency, and there is growing optimism regarding a new generation of native speakers.

Unless otherwise noted, all data reported here were obtained through interviews with native speakers of Tlingit. Six fluent Tlingit elders participated: Margaret Dutson (Sháax' Sáani), Selena Everson (Kaséix̱), William Fawcett (Kóoshdaak'w Éesh), Carolyn Martin (Ḵ'altseen), John Martin (Keihéenák'w), and Helen Sarabia (Ḵaachkoo.aakw). All six were residents of Juneau, AK at the time of our meetings, and are speakers of the Northern dialect of Tlingit (Leer 1991). Two or three elders were present at each of the interviews, which were held in classrooms at the University of Alaska Southeast in Juneau, AK.

The linguistic tasks presented to the elders were straightforward translation and judgment tasks. The elders were presented with various scenarios, paired with English sentences that could felicitously describe those scenarios. The scenarios were described orally to the elders, all of whom are entirely fluent in English, and a written (English) description was also distributed. The elders were asked to freely describe the scenarios, as well as to translate certain targeted English sentences describing them. In order to more systematically study their semantics – and to obtain negative data – sentences containing decessive morphology were examined using truth/felicity judgment tasks, a foundational methodology of semantic fieldwork (Matthewson 2004). The elders were thus asked to judge the 'correctness' (broadly speaking) of various Tlingit sentences relative to certain scenarios. The sentences evaluated were either ones offered earlier by the speakers for other scenarios, or ones constructed by myself and judged by the speakers to sound

natural and correct for other scenarios. Unless otherwise indicated, all speakers agreed upon the reported status of the sentences presented here.

Throughout this paper, I indicate whether a Tlingit sentence was (i) constructed by myself and judged by the elders to be acceptable, or (ii) actually spontaneously spoken by the elders themselves. In the former case, the sentence will be followed by a '(C)', for 'constructed'. In the latter case, I will write the initials of the speaker(s) who provided the sentence.[5]

3. The Tlingit 'Decessive' and 'Discontinuous Past'

3.1 The Tlingit Decessive: Morphology and Initial Semantic Description

In the system of Leer (1991), the decessive morphology of Tlingit is categorized as a so-called 'epimode', since it is able to combine with all so-called 'declarative modes' in the language. While this morphological terminology may be unfamiliar to non-Athabaskanists, the important point here is that the decessive marking may be added to verbs inflected for the following TAM categories: (i) imperfective, (ii) perfective, (iii) habitual, (iv) future, and (v) potential.

The decessive marker itself consists of two non-contiguous exponents: (a) the so-called '[-I]' feature of the verbal classifier, and (b) a verbal suffix.[6] The form of the verbal suffix depends upon the kind of clause headed by the verb. In a main clause, the decessive suffix is underlyingly -*een*, but phonological processes can cause it to surface as -*yeen*, -*éen*, -*yéen*, -*oon*, -*woon*, -*óon*, or -*wóon*. Furthermore, for speakers of the Northern Dialect of Tlingit, these allomorphs can all optionally contain short vowels (-*in*, -*yin*, -*ín*, -*yín*, -*un*, -*wun*, -*ún*, -*wún*). In a relative clause, however, the decessive suffix is underlyingly -*i*, and much the same phonological processes apply to generate varying allomorphs (-*yi*, -*u*, -*wu*). Finally, in all other subordinate clauses, the decessive is realized by the post-verbal particle *yéeyi*.[7] Throughout the example sentences in this paper, the suffix realizing decessive mode will be boldfaced for the reader.

In the earliest descriptive literature on Tlingit, the decessive is simply analyzed as an optional marker of past tense (Boas 1917: 84; Story 1966: 143). Later, in their extensive verbal dictionary for the language, Story & Naish (1973: 356) add the detail that the decessive "refer(s) to a time when the situation was other than it was, is, or will be." This aspect of the decessive's meaning is greatly expanded upon in the work of Leer (1991: 460-478), who states that this morphology "generally means that (the sentence) was true at some time in the past, but is no longer true at present" (Leer 1991: 461). However, Leer quickly amends this by noting that the exact contribution of the decessive depends upon the other TAM morphology born by the verb. There are six cases to be distinguished: (i) decessive stative imperfectives, (ii) decessive eventive imperfectives, (iii) decessive habituals, (iv) decessive futures, (v) decessive potentials, and (vi) decessive perfectives.

As already illustrated in (2) above, with stative verbs bearing imperfective aspect, the decessive contributes the implication that the past state does not extend into the present. Thus (2b) is translated as 'The weather was nice, but has since turned bad.' Importantly, Leer (1991: 464) notes that this cessation implication does not entail that the stative predicate is *false* at present. That is, sentence (2b) "could be said at a time when the weather was nice, so it obviously does not mean 'The weather was nice (but is now bad)'" (Leer 1991: 464). Similarly, Leer notes that sentence (8) could be truthfully and felicitously uttered by "someone who left Sitka at childhood and has since moved back" (Leer 1991: 465).

(8)   **Decessive Stative Imperfective: Cessation Implication**

Sheet'káx'   áwé   yéi xat tée**yin**   at k'átsk'u<u>x</u>   xat sateeyí.
Sitka.at   FOC   **IMPFV**.1sgS.be.**DEC**   boy   IMPFV.1sgS.be.SUB
I lived in Sitka when I was a child.   (Leer 1991: 465)

As noted by Leer, what the decessive seems to contribute to these cases is that *some particular state s* held in the past, and that state *s* does not extend into the present. Thus, (2b) is consistent with the weather currently being nice, just so long as its current state of niceness is distinct / separate from the state of niceness that held in the past. It is for this reason that the cessation implication is stated in (1b) as '*the (past) event/state does not extend into the utterance time*' rather than '*there is no event/state of the relevant sort at present.*' As we will see in Section 6, my proposed formal analysis will capture this subtle aspect of the decessive's meaning.

With eventive verbs bearing imperfective aspect, the contribution of the decessive is much the same. Again, a cessation implication is contributed, in this case the implication is that the event taking place in the past does not extend into the present. Sentence (9) illustrates.

(9)   **Decessive Eventive Imperfective: Cessation Implication**

<u>X</u>a<u>x</u>á**yeen**.
3O.**IMPFV**.1sgS.eat.**DEC**
I was eating it (but stopped).   (Leer 1991: 463)

For verbs bearing habitual marking, the decessive again contributes a cessation implication. Here, the implication is that the habit/disposition in question held in the past, but ended at some point. Thus, such verbs are commonly translated into English via the expression *used to*.

(10)   **Decessive Habitual: Cessation Implication**

<u>X</u>a<u>x</u>áa   nooj**een**.
3O.1sgS.eat   **HAB**.**DEC**
I used to eat it / I would eat it (habitually in the past)   (Leer 1991: 463)

A cessation implication is also contributed by the decessive when combining with verbs bearing future morphology. For future verbs, the overall contribution is that the event/state *was going to* happen in the past, but that past disposition does not extend to the present.[8]

(11)   **Decessive Future: Cessation Implication**

     Kei at ku<u>k</u>washée**yin**
     IndefO.**FUT.**1sgS.sing.**DEC**
     I was going to sing.   (Leer 1991: 475)

Finally, a cessation implication again surfaces when the decessive appears on a verb bearing so-called 'potential' inflection. As detailed by Leer (1991: 385-392), the potential is a weak circumstantial modal, and so communicates that the event *might* happen in the future.

(12)   **The Tlingit Potential Mode: A Weak Circumstantial Modal**

     <u>Scenario:</u> You are watching me place an antenna on my roof. I've put the antenna right at the edge of the roof. You notice it's hanging right over a spot where the kids often play. You want to warn me that the antenna might fall.

     <u>English Sentence to Translate:</u>   "Watch out! That might fall!"

     <u>Tlingit Translation Offered:</u>
     Dlookát latín! Aa<u>x</u>   **daak gwaaxeex**.   (SE, MD)
     watch.out   there.from   **POT.**3S.fall
     Watch out! It might fall!

Consequently, a decessive potential communicates that the event/state was a possible future outcome in the past, but this possibility doesn't extend into the present. As shown in (13), such verb forms are typically translated into English as "might have".[9]

(13)   **Decessive Potential: Cessation Implication**

     Gwál de   sh u<u>x</u>dajaag**ín**
     DUB already   REFL.**POT**.3sgS.kill.**DEC**
     He might have committed suicide [if things had been different].   (Leer 1991: 476)

     In sum, as documented by Leer (1991), with verbs bearing imperfective, habitual, future, or potential morphology, the decessive contributes the cessation implication in (1bi). However, as already noted in Section 1, the decessive appears to make a different contribution to verbs

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[8] Much like English *was going to*, there is also an additional implication that an event/state of the kind in question was never ultimately realized. That is (11) is typically understood to mean that the singing never did take place. In this paper, I will put aside this additional implication, but I assume that it is generated via the same means by which it arises for 'future-in-the-past' in English and other languages.

[9] As with decessive futures, there is an additional implication that the event/state in question was never ultimately realized. Again, I leave as a question for future research how this additional implication is generated.

bearing perfective aspect. In the words of Leer (1991: 468), "decessive perfective means that the situation as well as the state of affairs resulting from it was true in the past, but that the state of affairs resulting from the situation has ceased to be valid." Thus, sentence (3a) is understood to imply that the marriage – the state resulting from the event of being married – has ended. Similarly, (14) is taken to imply that the speaker has lost the knowledge they once had gained.

(14)   **Decessive Perfective: Cancelled Result Implication**

    X̲wasak̲óo**woon**.
    3O.**PFV**.1sgS.come.to.know.**DEC**
    I knew it (came to know it), but no longer do.   (Leer 1991: 464)

In addition to such 'cancelled result implications' (1bii), Leer observes another type of construal for decessive perfectives, which I refer to as an 'unexpected result implication'. In cases like (3b), Leer (1991: 468) claims that the decessive perfective implies that the *expected result* of the past situation "has ceased to be valid" (i.e., it never obtained). Another such case is presented in (15) below, which is understood to mean that the expected result of the addressee being told not to touch a knife failed to occur (that is, they touched a knife).

(15)   **Decessive Perfective: Unexpected Result Implication**

    Yéi   iyax̲wsakaa**yín**   "líl   lítaax̲ eeshéek̲."
    thus   2sgO.**PFV**.1sgS.say.**DEC**   NEG knife 3O.2sgS.reach.OPT
    I told you "don't touch a knife" (but you did anyway)   (Leer 1991: 468)

With perfective-marked verbs, then, the decessive makes either of the contributions in (1bii). As we'll see in the next subsection, these interactions between the TAM marking of the verb and the implications contributed by the decessive are strikingly similar to ones observed for certain past tense suffixes in other languages of the world.

3.2   Discontinuous Past: A Proposed Cross-Linguistic Tense Category

It has long been observed that languages seem to differ in whether tense marking is obligatory. That is, there are languages where verbs lacking past tense morphology are nevertheless able to describe events occurring in the past (Matthewson 2006, *inter multa alia*). In such languages, there are often 'optional past tense' morphemes. These morphemes that can only be used if the event/state in question occurs in the past, but they are not needed for past tense reference. Such languages might appear, then, to differ from canonical tense languages like English only in that their past tense morphemes are optional.

However, Plungian & van der Auwera (2006) argue that such a view of these languages is somewhat oversimplified. That is, in their survey of languages appearing to have optional past tense, they find that the markers in question regularly communicate more than simply the fact that the event/state occurred in the past. Furthermore, they find that the additional contribution of these markers depends upon the TAM marking of the predicate they combine with. Their overall generalization is stated above in (4) and repeated below in (16).

(16)   **Special Contributions of Optional Past Markers (Plungian & van der Auwera 2006)**

        a.   <u>Framepast (with Imperfective Verbs [states, processes, habits])</u>
                "Situations of limited duration, which are claimed not to extend up to the moment
                of speech." (Plungian & van der Auwera 2006: 323)

        b.   <u>Cancelled Result (with Perfective Verbs)</u>
                "The non-existence of a consequent state at the moment of speech (or its current
                irrelevance." (Plungian & van der Auwera 2006: 324)

Given that these markers appear to be richer in meaning than the (obligatory) past tense morphology of languages like English, Plungian & van der Auwera (2006) propose the term 'discontinuous past' to distinguish them. Here, the modifier 'discontinuous' evokes the notion that the past event/states in question are 'cut off' from the present, either because they do not extend into Utterance Time, or because their (expected) results fail to.

      We have already seen how the generalizations in (16), illustrated above in (5)-(6), are strikingly similar to Leer's (1991) description of the Tlingit decessive (1). Furthermore, many of the data cited by Plungian & van der Auwera bear an obvious similarity to examples of the decessive in Tlingit. For instance, in (17)-(18), the addition of discontinuous past to a perfective verb meaning 'went' is understood to imply that the subject has returned from their journey.

(17)   **Example of Discontinuous Past: Tokelauan (Plungian & van der Auwera 2006: 325)**

        a.   Kua   pa   te   vaka   ki   Niu Hila
                PFV   reach DET boat   to   New Zealand
                The boat has arrived in New Zealand

        b.   **Na**   kua   pa   te   vaka   ki   Niu Hila
                DisP PFV   reach DET boat   to   New Zealand
                The boat has been to New Zealand [i.e., *arrived there and came back*]

(18)   **Example of Discontinuous Past: Lezgian -*j* (Plungian & van der Auwera 2006: 333)**

        a.   Fe-na   b.   Fe-na-**j**
                go-PFV   go-PFV-**DisP**
                S/he went / has gone   *S/he went (and has returned)*

Thus, (17)-(18) would appear to exhibit the cancelled result implication of the Tlingit decessive (1bii). Furthermore, although Plungian & van der Auwera (2006) do not explicitly distinguish such cases from 'cancelled result' (16b), several of their examples seem to exhibit an 'unexpected result' implication (1bii). Note, in particular, the striking similarity between the Sranan example in (19) and the Tlingit sentence in (15).

(19)　**Example of Discont. Past: Sranan *ben* (Plungian & van der Auwera 2006: 328)**

A	**ben**	taigi	mi	a	o	kon	na	fesisey	baka
he	**DisP**	tell	me	he	FUT	come	to	front.side	again

He told me he would come back to the front again (but he disappeared).

As in (15), the past speech act described in (19) had an expected consequence – i.e., that the subject would meet the obligations imposed by the speech act – but that expected consequence failed to actually occur. Thus, it seems that Sranan *ben* can also contribute an unexpected result implication when combining with perfective verbs.

　　　It appears, then, that the Tlingit decessive may constitute another instance of discontinuous past. In this context, it should be noted that – like all other cases of discontinuous past reported by Plungian & van der Auwera – the Tlingit decessive is not necessary for past-tense reference. That is, Tlingit is a language where unmarked (non-perfective) verbs can be construed either with past or present tense reference (20), *just like all other languages that appear to have discontinuous past*.

(20)　**Tlingit Verbs Allow for Present or Past Interpretations**

　　　Imperfective

a.　xaxá

　　3O.**IMPFV**.1sgS.eat

　　I am eating it. (Leer 1991: 221)

b.　sh xadlitée

　　IMPFV.1sgS.rejoice.

　　I was rejoicing.　(Leer 1991: 342)

　　　Future

c.　kukaxáa

　　3O.**FUT**.1sgS.eat

　　I will eat it. (Leer 1991: 223)

d.　du een　sh kakkwadanéek.

　　him with　REFL.**FUT**.1sgS.narrate

　　I would tell him about myself. (Leer 1991: 343)

This curious relationship between a past being 'discontinuous' and it being 'optional' will feature prominently in our later analytic discussion.

3.3　The Tlingit Decessive and 'Cessation Implicatures'

Mirroring the prior literature, our semantic discussion of discontinuous past has thus far been rather informal. That is, the special contributions in (1b)/(16) have been described as 'implications', with no commitment as to whether they are actually entailments, (conversational) implicatures, presuppositions, *etc.* This, of course, raises the key question of whether those contributions in (1b)/(16) really are part of the core, conventionalized semantics of those morphemes, or whether they are simply some kind of defeasible implicature.

　　　Some initial grounds for doubting the semantic status of the implications in (1b)/(16) is simply that there is at present no real evidence for such a status. That is, both Leer (1991) and Plungian & van der Auwera (2006) only present *positive* data, examples where the discontinuous past / decessive is used and where the conditions in (1b)/(16) obtain. Consequently, we know

that the conditions in (1)/(16) are *sufficient* for use of these morphemes, but no data yet suggests that they are all actually *necessary* for their use. That is, neither Leer (1991) nor Plungian & van der Auwera (2006) present data showing that use of the discontinuous past / decessive requires one of the conditions in (1b)/(16) to hold; neither provides *negative* evidence showing that use of the discontinuous past / decessive is judged anomalous when (1b)/(16) fail to hold.

Furthermore, the positive evidence cited by Leer (1991) and Plungian & van der Auwera (2006) is invariably either (i) speaker translations of isolated example sentences, or (ii) a few illustrative excerpts from naturally produced texts. Unfortunately, neither are very reliable evidence for the semantic status of a given inference. After all, a consultant's translation into English of some sentence of their language could end up *asserting* information that is simply *implicated* by the source sentence; this is especially so if a simpler English translation would fail to carry the implicatures of the source sentence.[10] Furthermore, unless an extensive corpus survey is undertaken and reported, there is always the possibility that any textual examples cited in support of some semantic generalization might simply reflect an implicit selection bias. Indeed, we will see in Section 5 that there are in fact naturalistic examples of the Tlingit decessive, taken from published texts, where the conditions in (1b)/(16) seem not to hold.

Besides this, however, one significant reason to suspect that the implications in (1b)/(16) are not semantic in nature is their similarity to certain non-semantic inferences observed with past tense in languages like English. In particular, the 'framepast'/'cessation implication' in (16)/(1bi) is strikingly similar to so-called 'cessation implicatures', as defined in (21).

(21)   **Cessation Implicature (Altshuler & Schwarzschild 2013, 2014)**

When the utterance of a past tense sentence implicates that no state/event (eventuality) of the kind described currently holds.

It has long been noted that in certain contexts, the utterance of a past tense sentence implicates that the present tense variant of the sentence is false. This fact is often observed for stative predicates, especially for individual-level ('I-level') stative predicates, where the implicature in question entails that the subject of the sentence is no longer alive. Such 'life time effects' have a rich literature (Anderson 1973, Kratzer 1995, Musan 1997, Magri 2011, Thomas 2014), though the key implicature is by no means specific to either I-level or stative predicates. For example, the data in (22) below illustrate cessation implicatures with stative predicates (22a), eventive predicates (22b), habituals (22c), and circumstantial modals (22d,e). Note that, crucially, in each of the examples below, the past tense sentence is uttered 'out of the blue', i.e., there are no other past tense utterances in context.[11]

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[10] Note that under the analysis proposed in Section 6, the implications in (1b)/(16) are pragmatic inferences that arise from features specific to 'optional past tense' languages. Thus, they would not be generated for past tense utterances in English or other languages with obligatory past tense.

[11] These example sentences and contexts are based upon those in Altshuler & Schwarzschild (2013).

(22)   **Cessation Implicatures in English**

   a.   Stative Imperfectives:
         Context: Person is asking a doctor about their loved one, a patient.

         Dialog: Q: Is Scotty reacting well to the treatment, doctor?
                        A: **Well, he was nauseous.**

         Implicature: Scotty is no longer nauseous now.

   b.   Eventive Imperfectives:
         Context: Person is asking a doctor about their loved one, a patient.

         Dialog: Q: Is Scotty in pain, doctor?
                        A: **Well, he was moaning.**

         Implicature: Scotty is no longer moaning now.

   c.   Habitual:
         Context: Doctor is asking a relative about the history of his patient.

         Dialog: Q: Does Scotty have any unhealthy habits?
                        A: **Well, he smoked a lot.**

         Implicature: Scotty no longer smokes now.

   d.   Future (Strong Circumstantial Modal):
         Context: Person is asking doctor about their loved one, a patient.

         Dialog: Q: Is Scotty reacting well to the treatment, doctor?
                        A: **Well, he was going to throw up.**

         Implicature: He is not going to throw up now.[12]

   e.   Potential (Weak Circumstantial Modal):
         Context: Person is asking doctor about their loved one, a patient.

         Dialog: Q: Was Scotty's treatment really necessary, Doctor?
                        A: **Well, he might have died.**[13]

         Implicature: It's not presently true that he might die.

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[12] This utterance also implicates that Scotty did not in fact throw up. As mentioned in Footnote 8, I will put aside this additional implicature.

[13] Following Condoravdi (2002), I assume that *might have* under its circumstantial reading is a past tense modal, despite its surface morphosyntax.

Given the similarity between these cessation implicatures and the cessation implication in (1bi), one might begin to doubt whether 'discontinuous past' is really any different in its meaning from past tense in languages like English. That is, could it be that the special implications in (1b) are simply nothing more than the cessation implicatures found for past tense in English?

Although such a unified account is undoubtedly attractive, it faces several immediate challenges. First and foremost, the cessation implication of discontinuous past (1bi) is slightly different in content from the cessation implicature as defined in (21) and illustrated in (22). Recall that the cessation implication in (1bi) is that a *particular* past state s doesn't extend into the present. Consequently, discontinuous past statives are compatible with there presently being a (different) state s' of the kind described by the predicate. Thus, (2b) is consistent with the weather presently being nice, just so long as the present state of niceness is not continuous with the earlier state of niceness introduced by the sentence. This is rather different from the cessation implicature in (21)-(22), which holds that the predicate in question is not presently true. Thus, the cessation implicature in (22a) would not be consistent with Scotty presently being nauseous, rather unlike the cessation implication reported for (2b).

A further difficulty concerns the implications of the discontinuous past when combining with perfective verbs. It isn't immediately clear how the cancelled result and unexpected result implications in (1bii) could be predicted under a view where the cessation implication in (1bi) is merely an 'English-style' cessation implicature. After all, under such a view, discontinuous past perfectives would not differ in meaning from simple past perfectives in languages like English (i.e., English 'simple past'). However, such verbs in English have never been observed to carry implicatures anything like the cancelled result or unexpected result implications in (1bii). That is, sentences like (23a) aren't usually understood to trigger any inferences like those in (23b).

(23) a. (i) I learned his name. (ii) I made him a sandwich.
      b. (i) I have forgotten his name. (ii) He didn't eat the sandwich I made.

On the other hand, it should be noted that there are some past-tense verbal forms in English that do sometimes trigger inferences like (23b). In particular, as discussed by Plungian & van der Auwera (2006), Dahl (1985), and many others, past perfects ('pluperfects') in English and many other languages can trigger implicatures like those in (1bii).

(24) a. <u>Cancelled Result Implicature with Pluperfect (Dahl 1985)</u>
          Q: Why is it so cold in here?
          A: I **had** opened the window (earlier). [implicature: window is closed now]

      b. <u>Unexpected Result Implicature with Pluperfect</u>
          Q: Didn't Dave eat anything for dinner?
          A: I **had** made him some salmon. [implicature: but he didn't eat it]

In Section 6, I will return to the possible connection between the implicatures above and the cancelled / unexpected result implications in (1bii).

The strongest reason, however, not to view the cessation implications with discontinuous past as merely being English-style cessation implicatures is that the latter can be *cancelled* in a way that the former cannot. As noted throughout the literature on cessation implicatures and 'lifetime effects' (Anderson 1973, Musan 1997, Altshuler & Schwarzschild 2013), the cessation

implicatures of English past tense are cancelled if there is some salient, topical past time in the discourse. For example, if the present tense prompts in (22) are replaced with past-tense questions, restricted to a particular past topic time, then the past-tense responses no longer carry cessation implicatures. The data in (25) illustrate.

(25)   **Cancellation of Cessation Implicatures in English**

      a.   Stative Imperfectives:
          Dialog: Q: Was Scotty feeling well, **when you saw him**?
                       A: **Well, he was nauseous.**
                                (Does not imply that Scotty is no longer nauseous.)

      b.   Eventive Imperfectives:
          Dialog: Q: Was Scotty feeling well, **when you saw him?**
                       A: **Well, he was moaning.**
                                  (Does not imply that Scotty is no longer moaning.)

      c.   Habitual:
          Dialog: Q: Did Scotty have unhealthy habits, **when you knew him**?
                       A: **Well, he smoked a lot.**
                                  (Does not imply that Scotty no longer smokes).

Similarly, although they sound somewhat 'cute', it is possible in English to conjoin together the past tense and present tense versions of the same sentence without contradiction. The possibility of such sentences, illustrated in (26), clearly shows that the cessation inferences in (22) are merely cancellable implicatures.

(26)   **Conjoining Together Past and Present Tense Versions of the Same Sentence**

      a.   The weather has been nice all day. It **was** nice this morning, and it **is** still nice now.
      b.   Joe has been sleeping all day. He **was** sleeping this morning, and he **is** still sleeping now.

It is therefore quite striking that speakers of Tlingit categorically reject such uses of the decessive suffix (discontinuous past). That is, as is shown in (27)-(28) below, speakers report that the conjunction of a decessive-marked sentence with its unmarked variant is incompatible with a scenario where the event/state in question covers both the present and the past.

(27) **Failure to Cancel the 'Cessation Implication' of Tlingit Decessive**

Scenario: Joe has been sleeping all day. He was sleeping this morning, and he's still sleeping now.

a. Tlingit Sentence Offered:
Tle   yá   ts'ootaat dágáawé   tá   Joe.
then   this morning   indeed   **IMPFV**.3sgS.sleep   Joe

Ch'a yeisú   tá.   (SE)
just   still   IMPFV.3sgS.sleep
This morning, Joe was indeed sleeping. He's still sleeping now.

b. Rejected Sentence, Containing the Decessive:
\# Tle yá   ts'ootaat dágáawé   tá**yin**   Joe.
   then this morning indeed   **IMPFV**.3sgS.sleep.**DEC**   Joe

Ch'a yeisú   tá.
just   still   IMPFV.3sgS.sleep

Comments by Speakers: [14]
• "No; -*yin* makes it past tense. But you're saying that he's still sleeping." (SE)
• "No; [the first sentence] means he's already slept and gone." (WF)

(28) **Failure to Cancel the 'Cessation Implication' of Tlingit Decessive**

Scenario: The weather has been nice all day. It was nice this morning, and it's nice now.

a. Tlingit Sentence Accepted:
Yá ts'ootaat ch'a kuwak'éi.   Ch'a yeisú   kuwak'éi.   (C)
this morning just **IMPFV**.good.weather   just still   IMPFV.good.weather
This morning, the weather was nice. It's still nice now.

b. Rejected Sentence, Containing the Decessive:
\# Yá ts'ootaat ch'a kuk'éi**yin**.   Ch'a yeisú kuwak'éi.
   this morning just **IMPFV**.good.weather.**DEC** just still IMPFV.good.weather

Comments by Speakers:
• "I don't like *kuk'éiyin*. It's past tense. It means it's gone, the weather is gone. It's passed." (SE)

The rejection of sentences like (27b) and (28b) – as well as the speakers' comments themselves – indicate that the cessation implication of the Tlingit decessive cannot be cancelled

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[14] It should be noted that I do not here exhaustively list all comments by all speakers regarding rejected sentences. Thus, the number of comments following a rejected sentence are not an indication of the total number of speakers who rejected that sentence. For example (27b) was also rejected by MD, and (28b)-(30b) by WF and MD.

in the way that the cessation implicature of an English past tense can be in (25)-(26). Further support for this can be found in the rejection of sentences (29b)-(30b) in their paired contexts.

(29)   **Failure to Cancel the 'Cessation Implication' of Tlingit Decessive**

Scenario: We're at a party. You spot your friend Joe in a corner. You see that he is singing. You then go into the kitchen. There, you hear your friend Sue say 'Oh, I wish I could hear Joe sing!' You want to mention that you just saw him singing. Naturally, you assume that he's still singing now, so Sue can go hear it.

Target English Sentence: I just saw Joe. He **was** signing.

a.   Tlingit Sentence Offered:
Ch'a   yeisú   xwsiteen   Joe.   At shí.   (SE, WF)
just   just.now   3O.PFV.1sgS.see   Joe   IndefO.**IMPFV**.3sgS.sing
I saw Joe just now. He was singing.

b.   Rejected Sentence, Containing the Decessive:
Ch'a yeisú   xwsiteen   Joe.   At shí**yin**
  just   just.now   3O.PFV.1sgS.see.   Joe   IndefO.**IMPFV**.3sgS.sing.**DEC**

Comments by Speakers:
• "This one means that he's through singing, he had been singing." (SE)

(30)   **Failure to Cancel the 'Cessation Implication' of Tlingit Decessive**

Scenario: You walk by your friend Joe's house, and see him building a boat. A few minutes later, you bump into your friend Sue, and she asks what Joe has been up to. You want to tell her that, just a few minutes ago, you saw him working on his boat.

Target English Sentence: I just saw Joe. He **was** working on his boat.

a.   Tlingit Sentence Offered:
Dziyáak   Joe xwasateení,   du yaagú alyéix.   (MD, SE, WF)
earlier   Joe 3O.PFV.1sgS.see.SUB   his boat 3O.**IMPFV**.3sgS.build
When I saw Joe earlier, he was building his boat.

b.   Rejected Sentence, Containing the Decessive:
Dziyáak   Joe xwasateení,   du yaagú alyéix**in**.
  earlier   Joe 3O.PFV.1sgS.see.SUB his boat   3O.**IMPFV**.3sgS.build.**DEC**

Comments by Speakers:
• "No; that means he's not working on it now." (SE)

Note that the scenarios in (29)-(30), as well as the initial sentences and temporal adjuncts in (29b)-(30b), make salient a past topical time. Nevertheless, unlike English past tense in (25)-

(26), Tlingit decessive is still felt to imply that the event/state in question does not extend to the present. Thus, we again find that the cessation implication in (1bi) cannot be cancelled in the way that English cessation implicatures are.

Finally, it should of course be noted that the Tlingit speakers who I worked with did not simply reject every instance of the decessive suffix. Importantly, the decessive suffix was employed in scenarios where the cessation implication of (1b) was satisfied.

(31)   **Use of the Decessive When Cessation Implication Holds**

  a. Yéi x̲at gusagéink'**in**. Yeedát k̲u yéi x̲at kuligéi. (SE)
     IMPFV.1sgS.small.**DEC** now though IMPFV.1sgS.big
     I used to be small. Now, though, I'm big.

  b. Yá ts'ootaat k̲uk'éi**yin**.   Yeedát k̲u.aa tlél kushk'é.
     this morning IMPFV.good.weather.**DEC** now though NEG IMPFV.good.weather
     This morning, the weather was nice. Now, though, the weather is not nice. (SE)

  c. Gooshúk̲ gaaw áwé ch'a yeisú tá**yin**.
     nine   hour FOC just still IMPFV.3sgS.sleep.**DEC**

     Yeedát k̲u kei wdzigít. (SE, WF)
     now though PFV.3sgS.wake.up.
     At nine o'clock, he was still sleeping. Now, though, he's woken up.

  d. <u>Scenario:</u> You needed to get your sink fixed, and you called a plumber. But, I know a lot about plumbing, and could have fixed your sink for you. When I find out you paid for a plumber, I want to tell you that I could have done it for you.

     I jeeyís áyá yéi nk̲wasanei**yín.** (WF, SE)
     your hand.for FOC 3O.POT.1sgS.do.**DEC**
     I could have done it for you.

  e. <u>Scenario:</u> I was supposed to leave for Sitka this morning. When I got to the airport, though, I saw that my flight was cancelled!

     Yá ts'ootaat áwé Sheet'káadei kukkwatéen**in**. (WF, SE, MD)
     this morning FOC Sitka.to FUT.1sgS.travel.**DEC**
     This morning, I was going to travel to Sitka.

4. Modal Analyses of Discontinuous Past

In the preceding section, we saw that the cessation implication in (1bi) cannot in Tlingit be cancelled like the cessation implicature observed with English past tense. More generally, our attempts thus far to cancel the cessation implication have met with failure, which would suggest that the implications in (1b) are indeed a part of the core, conventionalized meaning of the Tlingit decessive, as well as 'discontinuous past' more generally. This conclusion, in turn, raises

the difficult question of how all the implications in (1b) could follow from a single lexical entry for discontinuous past. What is the meaning of 'discontinuous past' such that it would entail 'cessation' for non-perfective VPs (1bi), but either 'cancelled result' or 'unexpected result' for perfective ones (1bii)?

In independent work, both Copley (2005) and Kagan (2011) hit upon a potential answer. In brief, both Copley and Kagan view the 'unexpected result' implication as being essentially the principal entailment of discontinuous past, and both use the formal machinery of inertia worlds (Dowty 1977) to capture this entailment.[15] Furthermore, both Copley and Kagan propose that 'cancelled result readings' of discontinuous past perfectives can be viewed as a subspecies of 'unexpected result readings'. Finally, Copley (2005) additionally proposes that the cessation implication found with imperfectives can also be viewed as a subcase of the 'unexpected result' implication.[16]

For reasons of space, I will not review in full the analyses of Copley (2005) or Kagan (2011). Instead, I will present a relatively simplified amalgam of their analyses, one that reflects the central ideas of both approaches. As just mentioned, both Copley and Kagan view 'inertia worlds/situations' as being central to the analysis of discontinuous past. As in the seminal work of Dowty (1977), inertia worlds are defined roughly as in (32).

(32)   **Background Assumptions Regarding Inertia Worlds (Based on Kagan 2011)**

For any world w and time t, w' is an inertia world w.r.t. <w, t> (w' $\in$ Inr(w,t)) *iff*
a.   w' and w are exactly alike up until time t
b.   Following time t, everything that is **going on in** w at t **continues** in w' until it is **normal** for it to **stop** on the basis of its **internal properties**

Of course, this definition begs the question of what is meant by 'going on', 'continues', 'normal', 'stop', and 'internal properties'. As in other works making use of inertia worlds, both Copley (2005) and Kagan (2011) do much to explain these terms, but offer differing views on how best to understand and formally model 'inertia'. Nevertheless, both approaches predict the key fact in (33) below, central to all work making use of inertia worlds.

(33)   **Key Property of Inertia Worlds**
For any past time t', the actual world w_0 *need not* be inertial w.r.t. <w_0 , t'>.

That is, the actual world at the present time need not be an 'inertial development' of itself at a past time. The reason is, of course, that the things 'going on' in the actual world at past times might not 'continue' in the actual world; they might get 'unnaturally' interrupted. Extenuating circumstances might end up causing things to 'stop' before it's 'normal' for them to on the basis

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[15] In this section, my discussion will treat the Russian particle *bylo*, analyzed by Kagan (2011), as if it were a case of discontinuous past. This is done purely because the analysis developed by Kagan (2011) is so similar to the one developed by Copley (2005) for Tohono O'odham *cem*, a clearer case of discontinuous past. As we will see, however, there are important differences between Russian *bylo* and the discontinuous past markers of Tohono O'odham and Tlingit (see Footnote 22).

[16] Recall that the Russian discontinuous past marker *bylo* can only appear with perfective verbs (Section 1). Consequently Kagan (2011) does not discuss the issue of cessation implications with discontinuous past imperfectives.

of their 'internal properties'. This property of inertia worlds is central to all approaches making use of the concept, including Dowty's (1977) classic treatment of the English progressive. To briefly illustrate, Dowty (1977) predicts that the English past progressive sentence in (34a) has (roughly) the truth-conditions in (34b). Consequently, it can be true in a scenario like (34c); even though Dave never crosses the street in the actual world, in all the 'inertia worlds' splitting off from the past time 3:01PM, Dave does cross the street.

(34)   **Inertia Worlds in the Semantics of the English Progressive**

    a.   <u>Sentence:</u>   Dave was crossing the street.

    b.   <u>Truth-Conditions (Informally Put)</u>:
              There is a past time t' such that for all inertia worlds w' with respect to $\langle w_0, t' \rangle$, there is a time t'' containing t' such that 'Dave crosses the street' is true at $\langle w', t'' \rangle$.

    c.   <u>Verifying Scenario:</u>
              At 3:01PM, Dave began crossing the street. However, as he reached the middle the middle of the street, he was hit by a car.

With this much as background, it is possible to state the core intuition underlying both Copley's and Kagan's analyses of the discontinuous past. Under both analyses, the meaning of a discontinuous past marker entails both (35a) and (35b).[17]

(35)   **A Modal Semantics for Discontinuous Past (Copley 2005, Kagan 2011)**

    a.   The event/state in question held at a past time t'   (i.e., 'Past-ness' (1a))

    b.   **The actual world w_0 is not an inertia world with respect to $\langle w_0, t' \rangle$** (and so things *didn't* develop 'as normal').

Of course, the contribution of main interest here is the one in (35b): the actual world is not 'inertial'. Given the definition in (32), the condition in (35b) entails that some things 'going on' at time t' did not continue in a way that would be 'normal' for them to do. Furthermore, this entailment is claimed by Copley (2005) and Kagan (2011) to yield the implications in (1b), given certain auxiliary assumptions about what is 'normal' for various aspectual types. Those assumptions are spelled out under (36).[18]

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[17] Properly speaking, Copley (2005) is somewhat agnostic as to whether (35a) is an entailment of Tohono O'odham *cem* or whether it follows from other metaphysical assumptions of hers. I leave this issue aside here.

[18] Kagan (2011) is only committed to the assumptions in (36a), since she only seeks to derive the 'cancelled result' and 'unexpected result' implications of Russian *bylo*. The assumptions in (36b)-(36c), however, play an important role in Copley's (2005) analysis of Tohono O'odham *cem*.

(36)   **Normal Developments for Different Aspectual Types**

   a.   <u>Perfective VPs</u>
         Let VP be perfective. If VP is true of the time t in world w, then in all inertia
         worlds w' $\in$ Inr(w,t), both the following hold:

         (i)   All the typical/normal consequences of the event in question hold

         (ii)   The state resulting from the event in question continues for a 'reasonable
                 duration'

   b.   <u>Stative Imperfective VPs</u>
         Let VP be a stative verb in imperfective aspect. If VP is true of the time t in world
         w, then in all inertia worlds w' $\in$ Inr(w,t), the state in question continues for a
         'reasonable duration'.

   c.   <u>Eventive Imperfective VPs</u>
         Let VP be an eventive verb in imperfective aspect. If VP is true of the time t in
         world w, then in all inertia worlds w' $\in$ Inr(w,t), the event in question continues
         for a 'reasonable duration'.

To briefly illustrate, if a perfective VP like "Dave arrive" is true at a past time t', then (36a)
states that in all the inertia worlds w' $\in$ Inr(w,t'), all the 'normal' consequences of Dave's arrival
happen, and the resulting state of Dave's arrival – i.e., his being present – continues for some
'reasonable duration of time'. That is, in such inertia worlds, Dave stays for some reasonable
period of time, and doesn't simply leave the room the moment he arrives. Similarly, if a stative
imperfective VP like "Dave be asleep" is true at a past time t', then (36b) states that in all the
inertia worlds w' $\in$ Inr(w,t'), Dave's state of being asleep continues for a reasonable duration of
time; that is, the 'normal' continuation of a state of Dave being a sleep is that he continues to be
asleep for some 'reasonable' time span. Finally, if an eventive imperfective VP like "Dave be
dancing' is true at a past time t', then (36c) states that in all the inertial development of t', the
event of Dave's dancing continues for a reasonable duration as well.
        Given the auxiliary assumptions in (36), Copley (2005) and Kagan (2011) derive the
implications in (1b) from the condition in (35b). After all, if the actual world w_0 is *not* inertial
with respect to $<w_0,t>$, then (36) would seem to imply the consequences in (37).[19]

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[19] Of course, (35) and (36) don't actually entail (37); 'All As are Bs' and 'x is not an A' does not entail 'x is not a
B'. Thus, the account as presented here commits a logical fallacy. For technical reasons that I won't get into here,
Kagan's actual (2011) account doesn't suffer from this problem. However, as far as I can tell, Copley's (2005)
analysis does.

(37) **Deriving the Implications in (1b)**

If the actual world w_0 is *not* inertial with respect to $\langle w_0, t' \rangle$, then things didn't develop 'as normal' from time t'. Thus, the following 'normal developments' didn't happen in w_0.

a. Perfective VPs:
   (i) Some of the typical/normal consequences of the event/state in question did *not* happen, OR
   (ii) The state resulting from the event/state in question did *not* continue for a 'reasonable duration'.

b. Stative Imperfective VPs:
   The state in question *did not* continue for a normal duration after t'

c. Eventive Imperfective VPs:
   The event in question *did not* continue for a normal duration after t'

Clearly, if it's assertable that an event/state did not continue for a normal duration after a past time t', then it must be that that event/state *ended* prior to the utterance time. Consequently, (37b,c) yield the cessation implication in (1bi) for imperfective VPs. Furthermore, for perfective VPs, (37a) would imply that non-inertial worlds must be ones where either (i) the resulting state of the event ended prior to the utterance time, or (ii) the typical consequences of the event did not happen. Thus, (37a) would yield the 'cancelled result' and 'unexpected result' implications in (1bii).

In this way, Copley (2005) and Kagan (2011) are able to construct a single, unified lexical entry for discontinuous past that captures both the range of inferences it can trigger, as well as the interactions between those inferences and the TAM-marking of the verb. Despite the promise of this approach, there are three key reasons not to adopt it as a general theory discontinuous past. The first is simply that both Copley (2005) and Kagan (2011) view the inferences in (1b) as being entailments. However, we will see in the following section that – despite the facts in Section 3.3 – there is evidence that the inferences in (1b) are actually defeasable pragmatic inferences in Tlingit and many other languages.[20] Consequently, in the absence of evidence to the contrary, it would be most reasonable to assume that (1b) are likewise defeasible in all languages reported to have discontinuous past markers, and so we should put aside analyses where they are entailed by the lexical semantics of those markers.

Secondly, under the semantics in (35), an 'unexpected result' inference for a perfective VP (1bii.2) occurs only when the 'expected result' holds in the inertia worlds stemming out from the time when the VP was true. That is, the inference in (37ai) crucially assumes that the 'expected consequences' in question are ones that hold in all the inertia worlds for the past time t'. Thus, if p is an 'unexpected result' inference triggered by 'VP-DisP', the analysis in (35)-(36) would require ~p (the 'expected result') to hold in all the inertia worlds stemming out from the past time where 'VP' is true. Although this assumption may be plausible for certain simple cases, it is less reasonable for other attested cases of unexpected result inferences. For example, consider the Tlingit sentence in (15), repeated below.

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[20] To my knowledge, no such evidence yet exists for either Tohono O'odham *cem* or Russian *bylo*. Thus, it is still conceivable (though unlikely) that for these markers, the inferences in (1b) are semantic.

(38)   **Decessive Perfective: Unexpected Result Implication**

Yéi   iyax̱wsak̲aa**yín**   "líl   lítaax̱   eeshéek̲."
thus   2sgO.**PFV**.1sgS.say.**DEC**   NEG   knife   3O.2sgS.reach.OPT
I told you "don't touch a knife" (but you did anyway)   (Leer 1991: 468)

Under the informal analyses in (1)/(16), the discontinuous past (decessive) in (38) triggers the inference that the addressee touched a knife anyway, against the directions of the speaker. Intuitively, this is an 'unexpected result' from the point of view of the speaker. However, the formal analysis in (35)-(37) would require us to assume that in all the *inertia worlds* splitting off from the time of the speaker's utterance, the addressee follows their instructions. Unfortunately, this would stretch Dowty's (1977) classic notion of 'inertia world' well beyond its usual limits. Under that classic notion, the inertia worlds splitting off from the speech act described in (38) would be determined solely by the 'internal properties' of the speech act (see (32b)). It's quite unclear, however, what 'internal properties' of the speech act in (38) would lead the addressee in all inertia worlds to follow the instructions of the speaker. Indeed, if anything, the 'internal properties' of the speech act would (potentially) include the addressee's disposition *not* to follow the speaker's commands. Consequently, under the standard conception of 'inertia worlds' in (32), the 'expected result' invoked by (38) would not necessarily hold in the inertia worlds stemming from the time of the reported speech act. It seems, then, that the formal account in (35)-(37) would not actually generate this instance of an 'unexpected result' inference. Similar problems arise for the cases in (3b) and (19).[21]

A third problem for the inertia-based account concerns its treatment of the cessation implication with imperfectives. Under the analysis in (35)-(37), discontinuous past imperfectives are predicted to entail that the past state in question did not continue for a 'reasonable duration', and so therefore ended prior to the utterance time. Notice, however, that this predicted entailment is *stronger* than the cessation implication as stated in (1bi). That is, the implication in (1bi) is simply that the state in question ended prior to the utterance time; nothing in (1bi) implies that the state was cut 'unnaturally short'. Importantly, this weaker implication seems to be the right one for discontinuous past imperfectives. That is, discontinuous past can be used with stative imperfectives whenever the past state has ended, *even when that past state continued in a perfectly 'normal' and 'natural' fashion*. Consider, for example, the Tohono O'odham sentence in (39) below, which Copley recognizes as a problem for her account.

(39)   **Decessive Imperfectives Describing States that Reached a 'Natural' End**

Howij   'o   **cem**   suam
banana   AUX.**IMPFV DisP**   yellow
The banana was yellow (but is now black).   (Copley 2005: 8)

According to Copley (2005: 8), the sentence in (39) can describe a banana that has gone black as a result of the natural aging process for bananas. A parallel sentence form Tlingit is provided in (40) below.

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[21] Again, however, I do not know for certain whether such examples are possible with Tohono O'odham *cem* or Russian *bylo* (though I suspect they are). Thus, it is conceivable that this argument would not go through for those particular markers.

(40) **Decessive Imperfectives Describing States that Reached a 'Natural' End**

Scenario: You bought an apple several days ago. However, you never got around to eating it. As a result, it's gradually turned black as a result of the natural aging and rotting process.

Tlingit Sentence Offered:
X̱'aan yáx̱   tee**yín**   yá x'áax'. Yeedát ḵu.aa t'ooch woonee.   (MD)
red   IMPFV.3S.be.**DEC** this apple   now   though black PFV.3S.become
The apple was red. Now, though, it's become black.

The important point here is that in the scenarios associated with (39) and (40), the actual world w_0 is indeed an inertia world with respect to those past times when either the banana was yellow (39) or the apple was red (40). That is, in these scenarios, the state of fruit's color does continue for a 'reasonable duration'. Indeed, it seems that the state in question 'continues until it is normal for it to stop on the basis of its internal properties' (32b). Thus, the formal analysis in (35)-(37) would incorrectly predict that discontinuous past should not be possible in (39)-(40). Consequently, Copley (2005) recognizes this as a difficult challenge for her inertia-based semantics for Tohono O'odham *cem*; it would seem that this challenge generalizes to other cases of discontinuous past as well.[22]

5.   Evidence that the Additional Implications of Discontinuous Past are Pragmatic

In Section 3.3, we saw that the implications in (1b) of the Tlingit decessive cannot be cancelled in the way that the cessation implicatures of English past tense can. This fact, however, doesn't necessarily show that those implications are entailments. All we know for certain is that (1b) are not English-style cessation implicatures; they could nevertheless be generated via other pragmatic processes. In this section, I will present evidence that this is indeed the case. That is, despite the facts in Section 3.3, the implications in (1b) can be cancelled in certain environments, and so we must conclude that they are not part of the conventionalized, lexical content of the Tlingit decessive. We will also see that some of the arguments below extend to other alleged cases of 'discontinuous past' discussed by Plungian & van der Auwera (2006).

5.1   Problematic Examples Found in Naturally Produced Tlingit Texts

As one would expect from the description in Section 3.1, within naturally produced Tlingit narratives, decessive marking most commonly appears in contexts that support the inferences in (1b). However, upon further examination, this seems only to be a tendency. Within the published corpus of naturally produced Tlingit narratives, there are examples of the decessive where the inferences in (1b) are not contextually supported. Most importantly, there are even examples

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[22] Of course, because Russian *bylo* cannot combine with imperfectives, it is not subject to this empirical argument. Furthermore, Kagan (2011) provides evidence that the parallel prediction in (37aii) – that the 'cancelled result' implication requires the result in question to have been 'cut prematurely short' – does indeed hold for Russian *bylo*. For this reason, I suspect that Russian *bylo* may actually be a different animal from the discontinuous past markers analyzed here. Furthermore, Russian *bylo* doesn't function anything like an optional past tense in Russian, and so the analysis put forth in Section 6 would not extend to it.

where the inferences in (1b) would seem to be inconsistent with the surrounding context. For reasons of space, I provide just four illustrative cases below (some further potential cases are given in (78) in Section 6.2).

First, in sentence (41) below, the narrator is referring to a petroglyph carved by Ḵaax̱'achgóok, a hero of the Kiks.ádi clan in Sitka, AK. This petroglyph is generally known to still exist in Sitka (Dauenhauer & Dauenhauer 1987: 330), and in the line immediately following (41), the narrator tells the addressee (Nora Marks Dauenhauer) that they will go visit it later.

(41)   **Decessive Imperfective with No 'Cessation' Implication**

Ch'a   yeisú   áa   yéi tée**yin**   du   ji.eetí.
Just   still   there   **IMPFV**.3S.be.**DEC**   his   hand.remains
It was still there recently, the work of his hands.
(Dauenhauer & Daunehauer 1987; 100: 359)

With all this in mind, the decessive imperfective in (41) does not seem to imply in its original context that the carving is no longer there. Consequently, (41) is a (naturally produced) example of a decessive imperfective lacking the cessation implication in (1bi).

Examples of decessive perfectives lacking the implications in (1bii) are actually relatively common. First, in sentence (42), the narrator is introducing a story they are about to tell. Thus, the resulting state of their having been told the story – i.e., their knowledge of it – continues to hold at present; consequently, (42) would not seem to carry a 'cancelled result' implication in its original context.

(42)   **Decessive Perfective with No 'Cancelled / Unexpected Result' Implication** [23]

A   yaa•t'aa`   aya     ax̱ ee`n   kaw`tnee`g**in**.
it   this.thing FOC   1sgPOSS.with   3O.**PFV**.IndefS.tell.**DEC**
Now, I was told this story.   (Williams, Williams, and Leer 1978; 100: 54)

Moreover, in its original context, there is no identifiable 'unexpected consequence' of the story having been told to the narrator. Indeed, in its original context, (42) is doing nothing more than introducing the story that is about to be told; there is no evidence that it carries any more implications than its past-tense English translation in (42). Thus, (42) appears to be a naturally produced example of a decessive perfective lacking the implications in (1bii).

A similar example is presented in (43) below. In its original context, (43) is spoken by a 'city bear' who is explaining why he is afraid of policemen.

(43)   **Decessive Perfective with No 'Cancelled / Unexpected Result' Implication**

Wé ḵáax'w ax̱ x̱ooní, Billy Xóots,   has ayawusnaag**ín**   óonaa teen.
that men   my friend Billy brown.bear   3O.**PFV**.3plS.chase.**DEC**   gun   with
Those guys went after my friend Billy Brown Bear with a gun… (Hayes *et al.* 2011: 21)

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[23] The narrator of (42) (and (44) below) was a speaker of the Tongass dialect of Tlingit, which is non-tonal. Consequently, this sentence (and (44)) is transcribed using the special orthography of the original text, rather than the tonal Tlingit orthography used elsewhere in this paper.

In the lines immediately following (43), the bear explains that he hasn't seen his friend Billy Brown Bear since he was chased away by the policemen. Thus, in context, it seems that the state resulting from the event described in (43) – the absence of Billy Brown Bear – holds at the time of speech. Consequently, it's clear that in context (43) does not have a 'cancelled result' implication. Furthermore, sentence (43) doesn't seem to have an 'unexpected result' implication in its original context either; no such result is mentioned or suggested by the original context. It seems, then, that the perfective decessive in (43) carries neither of the implications in (1bii).

One last striking example is presented in (44) below, which contains two decessive perfectives.

(44)   **Decessive Perfective with No 'Cancelled / Unexpected Result' Implication**

    a.   Aa'   katoohei•x̱i   x̱wastee•n**in**
           there   IMPFV.1plS.farm.SUB   3O.**PFV**.1sgS.see.**DEC**
           I saw that we farmed them.

    b.   Yoo   ax̱ jee`t    aa`watiy̱i   tl'atk.
           that   my hand.to   3O.PFV.3sgS.give.REL   land
           on the land that she gave me.

    c.   Hit   kagaa• s'i a ee`ti   k̲utl'kw   too•nax̱   kawt.aa•
           house post   its remains   dirt   through   PFV.3S.stand
           The remains of house posts were sticking up out of the dirt.

    d.   K̲a   gan   ee`ti   awu.
           And   firewood   remains   there.LOCP
           And there were ashes.

    e.   Ach   ayoo`  du          x̱'ei'   ax̱wahee`n**in**.
           3O.INST   FOC 3.POSS   mouth 3O.**PFV**.1sgS.believe. **DEC**
           That's why I believed her (came to believe her).
           (Williams, Williams, and Leer 1978; 26: 112-117)

In the narrative from which (44) is taken, the narrator is explaining how her mother-in-law once showed her that the village of Taakw Aani, near Metlakatla, was originally Tlingit land (though it subsequently became Tsimshian territory). It is clear in the original narrative that the narrator continues to believe her mother-in-law's claim. Consequently, both the resulting states of the 'seeing' in (44a) and the 'coming to believe' in (44e) continue to hold at the time of speech. Thus, we can conclude that the decessive perfectives in (44a) and (44e) are not construed with 'cancelled result' implications. Furthermore, there is again in context no unexpected results of either the seeing event in (44a) or the 'coming to believe' event in (44e). It seems, then, that in their original context, the decessive perfectives in (44a) and (44e) really only contribute past tense (1a), and don't contribute any of the additional implications in (1b).

In summary, it is possible to find in naturally produced Tlingit narratives instances of decessive marking where the additional implications in (1b) are not supported by – indeed, are inconsistent with – the surrounding context. It is fair to conclude, then, that in these examples,

the decessive does not bring with it the implications in (1b). Consequently, it would seem that those implications are not part of the core, lexical meaning of the decessive marking, but are instead defeasable, pragmatically-based inferences of some sort.

5.2 Cancellation of Cessation Implication (1bi) with Explicit Statements of Ignorance

In Section 3.3, it was shown that, unlike a cessation implicature in English, the cessation implication of a decessive imperfective in Tlingit is not cancelled simply by there being a contextually salient, topical past time. Importantly, however, it does seem that the cessation implication in (1bi) can be cancelled by an explicit statement of ignorance concerning the present (i.e., the Utterance Time). That is, as shown by dialogs like the following, Tlingit speakers can use the decessive when they *don't know* whether the past state/event extends into the present.

(45)   **Cancellation of Cessation Implication (1bi) with Statement of Ignorance**

English Dialog to Translate:
Joe: "When I went to Sitka, I saw John."
Sue: "Oh! John is in Sitka?"
Joe: "Well, he *was* in Sitka. I don't know if he still is."

Tlingit Translation Offered:

a.   <u>Joe:</u>   Sheet'kát   kuxwatéeni,   John   xwasiteen.   (SE)
                     Sitka.to   PFV.1sgS.travel.SUB   John   3O.PFV.1sgS.see
                     When I traveled to Sitka, I saw John.

b.   <u>Sue:</u>   O!   John   gé   áwu   hú   Sheet'ká?   (SE)
                     Oh   John   Q   there.LOCP   him   Sitka
                     Oh, is John there in Sitka?

c.   <u>Joe:</u>   Ha,   áa   yéi teey**ín.**
                     EXCLM   there.at   IMPFV.3sgS.be.**DEC**

                     Tlél   xwasakú   ch'a yeisú   áa   yéi teeyí   (SE)
                     NEG   3O.PFV.1sgS.know   just   still   there.at   IMPFV.3sgS.be.SUB
                     Well, he was there. I don't know if he's still there.

In the dialog above, Joe explicitly states that he *doesn't know* whether John is still currently in Sitka. Nevertheless, the decessive suffix appears in the translation under (45c): *Áa yéi teeyín* 'he was there'. Since Joe admittedly doesn't know whether John is still in Sitka, he could not be asserting in (45c) that John *is no longer* in Sitka. Thus, we find that the decessive imperfective in (45c) does not imply here that John is no longer in Sitka. Consequently, it seems that the cessation implication (1bi) is cancelled (defeated) in this context. Additional examples of such dialogs are given in (46) and (47).

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(46)	**Cancellation of Cessation Implication (1bi) with Statement of Ignorance**

English Dialog to Translate:
John: "Is Tom still asleep?"
Mary: "Well, he *was* asleep earlier, but I don't know if he still is.

Tlingit Translation Offered

a.	John:	Táam gé ch'a yeisú tá?					(WF)
		Tom Q just still IMPFV.3sgS.sleep
		Is Tom still sleeping?

b.	Mary:	Yeisú dziyáak táa**yin**.
		still earlier IMPFV.3sg.sleep.**DEC**

		Hél xwasakú ch'a yeisú shákdé tá. (MD, WF)
		NEG 3O.PFV.1sgS.know just still DUB IMPFV.3sgS.sleep
		Well, he was sleeping earlier. I don't know if he is still sleeping.

(47)	**Cancellation of Cessation Implication (1bi) with Statement of Ignorance**

English Dialog to Translate:
Tom: "When I lived in Sitka, Joe was married to Anne."
Sue: "Oh! Are Joe and Anne married?"
Tom: "Well, they *were* married. I don't know if they still are."

Tlingit Translation Offered:
a.	Tom:	Sheet'káx' yéi xat teeyí,
		Sitka.at IMPFV.1sgS.be.SUB

		Anne ka Joe wooch has wudisháa.				(SE, JM)
		Anne and Joe RECIP.PFV.3plS.marry
		When I lived in Sitka, Anne and Joe were married to each other.

b.	Sue:	Ha! Ch'a yeisú gé wooch xáni yéi s ditee? (SE)
		EXCLM just still Q RECIP vicinity.at IMPFV.3plS.be
		Oh! Are they still together?

c.	Tom:	Ha, wooch has wudasháa**yin**.			(SE)
		EXCLM RECIP.PFV.3plS.marry.**DEC**

		Tléil xwasakú ch'a yeisú wooch xáni gé yéi s ditee.
		NEG 3O.PFV.1sgS.know just still RECIP.vicinity.at Q IMPFV.3plS.be
		Well, they were married. I don't know if they are still together.

In the dialogs above, Mary and Tom don't know whether a particular state (Tom's sleeping / Joe and Anne's marriage) extends into the present or not. Nevertheless, in the Tlingit translations of their statements, they use the decessive suffix when describing those past states. It follows, then, that the decessive sentences in these dialogs cannot be asserting that the past states in question *fail* to extend into the present; after all, Mary and Tom explicitly state that they don't know whether that's the case. We can therefore conclude that in these examples, the decessive suffix does not contribute the cessation implication (1bi).

In summary, it is possible after all to cancel the cessation implication of a decessive imperfective in Tlingit. Although that implication is not cancelled merely the be existence of a topical past time (Section 3.3), it can be cancelled by an explicit statement of ignorance concerning the present. Consequently, the cessation implication in (1bi) is not part of the core, conventionalized meaning of the Tlingit decessive.

5.3   The Behavior of Decessive and Discontinuous Past in Embedded Clauses

Further evidence that the implications in (1b) are not part of the lexical semantics of the Tlingit decessive can be found in the behavior of decessive verbs in certain embedded environments. We'll see that parallel data have also been reported by Plungian & van der Auwera (2006) for certain other instances of 'discontinuous past'.

The first environment of interest here is the complement of a propositional attitude verb. The key generalization is as stated in (48) below.

(48)   **Decessive Verbs in the Complement to Decessive Propositional Attitude Verbs**

If a propositional attitude verb is in the decessive, then the verb of its complement can also bear decessive, *without contributing any of the implications in (1b)*.

To illustrate, consider the scenario in (49a), as well as the felicitous Tlingit sentence in (49b).

(49)   **Embedded Decessive Verb Lacking Cessation Implication**

a.   Scenario: When I as a kid, my uncle would bring over all this really great food to our house. I naturally assumed that he made it, and that he was a really great cook. Turns out, though, that he just bought the food from restaurants downtown!

b.   Tlingit Sentence Offered:
Yéi xwajeeyín   ax̱ káak ḵúnáx̱ k'idéin **at sa.éeyin**.   (SE)
3O.IMPFV.1sgS.think**.DEC** my uncle very well   3sgS.IMPFV.cook**.DEC**
I used to think that my uncle cooked really well.

What's crucial here is that in scenario (49a), what the imagined speaker actually believed was "my uncle *cooks* really well". They did not ever believe "my uncle used to cook really well, but doesn't any longer." Thus, the decessive suffix on the embedded imperfective verb *at sa.éeyin* 'he cooked' seems not to contribute the cessation implication of (1b).

One might nevertheless doubt whether cases like (49b) provide convincing evidence that (1b) is not a part of the lexical semantics of the Tlingit decessive. To begin, let us note that for

exactly the reasons just mentioned, the embedded decessive in (49b) also seems not to contribute the *past* implication in (1a) either. Consequently, the appearance of the decessive in (49b) seems rather similar to so-called 'simultaneous readings' of embedded past tense in languages like English, as illustrated by sentences like (50) in contexts like (49a).

(50)   **Simultaneous Reading of Embedded Past Tense in English**

       I **thought** that my uncle **cooked** really well.

Given the similarity between (49b) and (50), one might wonder whether Tlingit (49b) should receive the same general formal analysis as English (50). Now, the most successful analyses of simultaneous readings in English posit that the embedded past tense in sentences like (50) is not actually semantically interpreted (Abusch 1997, Kratzer 1998, von Stechow 2003). Therefore, one might wonder whether the possibility of (49b) is rather due to a general 'semantic invisibility' of the embedded decessive, an analysis that would be consistent with the decessive lexically encoding both the implications in (1a) and (1b).

       In response to this concern, it should be noted that – unlike cases of 'vacuous' embedded past in English (50) – the embedded decessive in (49b) is entirely optional. That is, along with (49b), the sentence in (51) is also reported to be acceptable in context (49a).

(51)   **Optionality of Decessive Embedded Under Decessive**

       Yéi x̲wajeeyín   ax̲   káak k̲únáx̲ k'idéin **at sa.éeyi**.   (C)
       3O.IMPFV.1sgS.think.**DEC**   my uncle very   well   3sgS.IMPFV.cook.SUB
       I used to think that my uncle cooked really well.

Those analyses which treat cases like (50) in English as containing 'vacuous past' also predict that such instances of vacuous past are *obligatory* in these embedded environments. Furthermore, the possibility of both (49b) and (51) is instead quite reminiscent of the behavior of embedded past tense in (some speakers') Modern Hebrew (Ogihara & Sharvit 2012).

(52)   **Simultaneous Readings of Embedded Past in (Some Idiolects of) Modern Hebrew**

       a.   Yosef **xašav**   še   Mariam   **ahava**   oto
              Yosef **think-PST** that   Marian   **love-PST**   him
              Yosef thought that Mariam loved him (i.e., *Yosef thought, "Miriam loves me"*)

       b.   Yosef **xašav**   še   Mariam   **ohevet**   oto
              Yosef **think-PST** that   Marian   **love-PRES**   him
              Yosef thought that Mariam loved him (i.e., *Yosef thought, "Miriam loves me"*)

Ogihara & Sharvit (2012) argue that in Hebrew sentences like (52a), the embedded past *is* indeed interpreted, but undergoes a movement operation that results in the 'anteriority' contributed by the embedded past tense (1a) to *seemingly* be vacuous. Space precludes a detailed explanation of their analysis, but the key point here is that it would better to analyze Tlingit sentences like (49b) using the mechanisms proposed by Ogihara & Sharvit (2012) for Hebrew sentences like (52a).

Since this treatment assumes that embedded past *is* interpreted, we'd similarly conclude that the embedded decessive in (49b) is interpreted as well. Consequently, we again come to the conclusion that the absence of the cessation implication with the embedded decessive in (49b) suggests that (1b) is not part of its lexical semantics.[24]

Some further data supporting the key generalization in (48) are presented in (53) and (54) below.

(53)   **Embedded Decessive Verb Lacking Cessation Implication**

    a.   <u>Scenario:</u> When you were a child growing up in Southeast Alaska, Juneau seemed like a big city to you. Of course, as you got older and visited places like Seattle and San Francisco, you learned that Juneau wasn't so big after all.

    b.   <u>Tlingit Sentences Offered:</u>

        (i)   **Yéi x̲wajéeyin**   Jóonoo aan tlein̲x̲ áwé **satéeyin**.   (WF)
             3O.IMPFV.1sgS.think**.DEC** Juneau city big FOC IMPFV.3S.be**.DEC**
             I used to think that Juneau was a big city.

        (ii)   **Yéi x̲wajéeyin**   Jóonoo kúnáx̲   **géiyin.**   (MD)
             3O.IMPFV.1sgS.think**.DEC** Juneau really   IMPFV.3S.big**.DEC**
             I used to think that Juneau was big.

Again, in scenario (53a), what the imagined speaker believed was "Juneau *is* a big city". They didn't ever hold the belief "Juneau *was* a big city, but isn't anymore." Thus, again the decessive suffix on the embedded imperfective verbs in (53b) seems not to contribute the cessation implication of (1b).

The examples thus far have all involved cases of embedded decessive imperfectives. The data in (54) show that parallel results can be obtained for embedded perfectives as well.

(54)   **Embedded Decessive Verb Lacking Cancelled Result Implication**

    a.   <u>Scenario:</u> When you were kid, your other brother seemed to know the answer to every question. As you grew older, though, you learned that a lot of those answers were just made up, and he didn't really know all that he seemed to know.

    b.   <u>Tlingit Sentence Offered:</u>
        Yéi x̲wajéeyin   ax̲ hún̲x̲w ldakát át **awsakóowun**.   (MD, WF)
        3O.IMPFV.1sgS.think**.DEC** my brother everything 3O.PFV.3sgS.know**.DEC**
        I used to think that my brother knew (had come to know) everything.

---

[24] Again, space precludes a full discussion here, but it's important to note that only the *anteriority* (past) implication in (1a) would be predicted by Ogihara & Sharvit (2012) to seem to disappear. If the inferences in (1b) were part of the lexical semantics of the decessive, nothing in Ogihara & Sharvit's (2012) analysis would account for their absence in (49b).

In this scenario, what the speaker believed was "my brother knows everything"; they did not ever believe "my brother knew everything, but has since forgotten it." Consequently, the decessive suffix on the embedded perfective verb *awsakóowun* 'he knew (had come to know) it' seems not to contribute the cancelled result implication of (1b). (Similarly, given the context in (54a), it doesn't seem to contribute the 'unexpected result implication' either.)

Thus far, we've seen that decessive verbs in the complement of decessive propositional attitude verbs seem not to carry the implications in (1b). Another embedded environment exhibiting a similar effect can be found in the past counterfactual conditionals of Tlingit. The key generalization here is as stated in (55) below.

(55) **Decessive Verbs in the Antecedent of Past Counterfactuals**

If the verb heading the main clause (consequent) of a counterfactual conditional bears decessive (and so is a 'past counterfactual'), then the verb heading the antecedent must also bear decessive, *without contributing any of the implications in (1b).*

Before illustrating the generalization in (55), let us first introduce the structure of past counterfactual conditionals in Tlingit. As shown below, such conditionals are formed from (i) a main clause (consequent) headed by a decessive verb (in 'potential' mode), and (ii) a subordinate clause (antecedent) headed by a verb also bearing decessive morphology (Leer 1991: 476-478).

(56) **Past Counterfactual Condtionals in Tlingit**

a. Scenario: Your friend is complaining of a stomachache. You have medicine that works really well for stomachaches. You tell him to take it, but he doesn't like medicine, and says 'no'. Later on, he starts complaining about his stomachache again. Of course, he wouldn't be feeling bad if he had just taken the medicine

b. Yá náakw óosh gé **yidanaayín,** i.éet **gwadasheeyín.** (SE)
this medicine HYPO PFV.2sgS.drink.**DEC** you.to **POT**.3sgS.help.**DEC**
If you had drunk this medicine, it would (could) have helped you.

In addition to illustrating the general form of past counterfactuals in Tlingit, sentence (56b) also nicely illustrates the key generalizaion in (55). Note that the antecedent of the conditional in (56b) is a decessive perfective verb. Now, it is most natural to assume (at least, provisionally) that past counterfactuals in Tlingit have approximately the semantics of past counterfactuals in English. Consequently, a conditional like that in (56b) states (approximately) that in all the hypothetical situations where the antecedent clause is true, the consequent clause is also true (Ogihara 2000, Arregui 2009, Ippolito 2015). Thus, (56b) would state that in all the hypothetical situations where the antecedent is true, the addressee gets over their stomachache. Now, given the information in scenario (56a), the addressee gets better in those hypothetical situations where the medicine was drunk *and the resulting state / expected consequences of the drinking hold*. Therefore, the antecedent clause must be understood as contributing those kinds of situations. In particular, the antecedent could not be felicitously interpreted as contributing situations where the medicine was drunk and either (i) the resulting state of the consumption no longer holds, or (ii) the usual consequences of the consumption don't happen. Consequently, we

must conclude that both the 'cancelled result' and 'unexpected result' implications in (1b) are not contributed by the decessive suffix in the antecedent of (56b).

To put it another way, if the implications in (1b) were an obligatory part of the lexical semantics of the decessive, then the conditional in (56b) would mean something approximately like "If you had drunk this medicine, *and the normal result of the drinking either no longer held or never happened,* it would have helped you." Clearly, such a conditional meaning would not be felicitous in scenario (56a), precisely because the medicine is assumed to be an effective cure for stomachaches. It seems, then, that conditional structures like (56b) provide us another case where the inferences in (1b) are disassociated from the decessive suffix, supporting the view that those inferences are not part of the decessive's lexical semantics.[25]

Importantly, the reasoning just laid out regarding (56b) would appear to generalize beyond Tlingit, to putative instances of 'discontinuous past' in many other languages as well. Plungian & van der Auwera (2006) report that past counterfactual structures like (56b) are rather common in languages containing 'discontinuous past'. That is, as illustrated below, putative cases of discontinuous past are often obligatory in the antecedent of past counterfactuals.

(57)   **Discontinuous Past in Antecedent of Past Counterfactual Conditionals**

    a.   Sranan (Plungian & van der Auwera 2006: 341)

Efu	unu	**ben**	tenapu	luku,	unu	**ben**	sa	bori	en	leki	mi
If	you	**DisP**	stand	look	you	**DisP**	POT	cook	it	like	me

*If you **had** stood and looked, you**'d** probably cook it like me.*

---

[25] However, one might again wonder whether the decessive morphology in the antecedent of (56b) is actually semantically interpreted. After all, there are semantic analyses of *present* counterfactuals, like (i) below, where the past tense in the antecedent is 'semantically vacuous' or undergoes a special reinterpretation where it no longer functions as a tense (Iatridou 2000, Arregui 2009).

(i)   If Dave **was** in New York, he **would** be having a great time.

It's important to note, however, that Tlingit sentences like (56b) are in their semantics *past* counterfactuals, more akin to English sentences like (ii).

(ii)   If Dave **had been** in New York, he **would have** had a great time.

Now, as has long been observed, such conditionals in English appear to have *two* layers of past tense in their antecedent: (a) the past morphology on the auxiliary *have*, (b) the perfect auxiliary *have*. While the former is commonly analyzed as 'semantically vacuous' like the past tense in (i), the latter is not, and is usually viewed as contributing to the truth-conditions of the construction (Ogihara 2000, Arregui 2009, Romero 2015). Finally, it should be noted that the decessive morphology in Tlingit conditionals like (56b) appears to correspond to the second, semantically interpreted layer of past tense in (ii). Note, for example, that *present* counterfactuals in Tlingit do not contain decessive morphology.

(iii)   Ts'ítskw óosh gé **xat sitee**,   ch'a   tlákw   **ax toowú kei guxsagóo.**

           Bird   HYPO   1sgS.**IMPFV**.be   just   always 1sgS.**FUT**.be.happy.

           If I were a bird, I would always be happy.   (SE)

The structure of conditionals like (iii) in Tlingit suggests that the language does not have the kind of 'semantically vacuous' conditional past tense that is found in languages like English. Thus, the decessive morphology in (56b) would seem to be semantically interpreted, and so would correspond semantically to the (interpreted) perfective auxiliary *have* in sentences like (ii).

Bearing all this in mind, it again seems that one must view the decessive morphology in (56b) as being semantically interpreted. Therefore, the absence of the implications in (1b) does indeed suggest that they are not part of the decessive's lexical semantics.

b. Wolof (Plungian & van der Auwera 2006: 340):
   buma   wax-**oon**
   if:1sgS   speak-**DisP**
   *If I **had** spoken…*

c. Bamana (Plungian & van der Auwera 2006: 340):
   Su   rX ni ne   **tun**   te   de,
   night at if 1sgS **DisP** be.NEG   EMPH

   faama **tun** be   i   kun   ci   ka   i   faga   de
   king **DisP** IMPFV   2sg head cut   INF   2sg   kill   EMPH
   *If I **had** not been there in that night, the king **would have** cut your head off…*

Although Plungian & van der Auwera do not provide contexts for these sentences, their translations strongly suggest that the inferences in (1b)/(4) are not contributed to the antecedents of these conditionals. Thus, these all appear to be cases where those inferences in (1b)/(4) are not associated with use of a 'discontinuous past', and so support the view that *in all languages with 'discontinuous past'*, the inferences in (1b)/(4) are not part of the lexical semantics of the morphology in question.

5.4   Decessive in Contexts Where the Present is 'Irrelevant'

One final environment where the Tlingit decessive seems not to trigger the inferences in (1b) are contexts where the present is in a sense 'not relevant' to the purpose of the conversational exchange. Consider, for example, the context in (58a) and the Tlingit sentences in (58b).

(58)   **Decessive Without Cessation or Cancelled/Unexpected Result Implications**

a. Scenario: You've lived your whole life here in Juneau. Someone is interested in what the Southeast was like in the 1950s. So, they ask you, "Where did you live in the 1950s?" You want to answer that you lived here.

b. Tlingit Sentences Offered:

   (i)   Jóonoox'   **yéi xat teeyín**.   (CM)
          Juneau.at   IMPFV.1sgS.be.**DEC**
          I lived in Juneau.

   (ii)   Aa   **yéi xat teeyín**,   Jóonoo   (SE)
          there IMPFV.1sgS.be.**DEC**   Juneau
          I used to live in Juneau.

The scenario above makes clear that the speaker has lived their whole life in Juneau, and has never moved away. Curiously, the Tlingit sentences offered for this scenario bear the decessive suffix. It seems, then, that the decessive imperfective verbs in (58a,b) don't in this context contribute the cessation implication in (1b).

Why would the cessation implication be absent from these sentences? One possibility – predicted by the formal analysis proposed in Section 6 – is that in scenario (58a), the present time is wholly irrelevant. That is, the imagined interviewer is only interested in knowing where the speaker lived during the 1950s; whether the speaker currently lives in Juneau or not just isn't relevant to the purpose of the conversation. This line of explanation could also make sense of the otherwise surprising appearance of the decessive in the following translated dialog.

(59) **Decessive Without Cessation or Cancelled/Unexpected Result Implications**

    a.   <u>English Dialog to Translate:</u> Dave and Tom visited Juneau once about 10 years ago. Now they're back in town again, noticing the things that have changed.

        Dave: (Pointing to the Juneau-Douglas Bridge): "Hey, that bridge is new!"
        Tom: "No way! That bridge was here 10 years ago."

    b.   <u>Tlingit Translation Offered:</u>

Dave:	Haaw!	Yées dzeit	áwé	s awliyé<u>x</u>.	(WF, MD)
	EXCLM	new bridge	FOC	3O.PFV.3plS.make	

        Hey! They built a new bridge!

Tom:	Tléik'!	Jinkaat táakw shákdé	**wudulyeix̱ín**.	(WF)
	no	ten year DUB	3O.PFV.IndefS.make.**DEC**	

        No! That bridge had been built ten years ago.

Again, the decessive perfective verb *wudulyeixín* 'it had been built (they had built it)' in (59b) does not seem to contribute either the 'cancelled result' or the 'unexpected result' implications in this context. As we'll see in Section 6, one possibility as to why may be that in scenario (59a), the present time isn't really on the speakers' minds nor is it relevant to their discussion. Rather, they are simply debating the time in the past that the bridge was built; the question of whether the bridge is still there isn't of relevance to the discussion.

    Whether or not this is the right interpretation of these facts, the data in (58)-(59) nevertheless present additional cases – along with the textual data from Section 5.1 – where use of the decessive does not bring with it the inferences in (1b), suggesting that those inferences are not encoded in the lexical semantics of the Tlingit decessive.

5.5   Typological Argument Against the Separate Existence of 'Discontinuous Past'

The preceding sections presented evidence that the additional implications in (1b) are not encoded in the lexical semantics of the Tlingit decessive, nor – by extension – that of other putative instances of 'discontinuous past'. There is also, however, a further reason to be skeptical of the existence of a separate category of 'discontinuous past' in the languages of the world. Recall from our discussion in Section 3.2 the following curious fact about languages appearing to exhibit 'discontinuous past'.

(60)   **A Curious Coincidence: 'Discontinuity' and Optionality**
As noted explicitly by Plungian & van der Auwera (2006: 326-333), in nearly all languages containing a 'discontinuous past':

a.   There is no obligatory past tense morphology.
  o *I.e.*, unmarked verbs can receive either past or present interpretation

b.   The 'discontinuous past' is the only morpheme that contributes past tense [26]

According to the typological generalizations in (60), there are *no* languages that contain both (i) a discontinuous past, and (ii) an optional 'pure' past tense, triggering only the 'past' implication in (1a). Similarly, there appears not to be any 'obligatory tense' language that also contains a discontinuous past marker, optional or obligatory.[27] Relatedly, there does not appear to be any language exhibiting an obligatory discontinuous past marker; that is, in every language with a putative 'discontinuous past', the marker in question does not have to be used in contexts supporting the implications in (1a) and (1b).

These facts, of course, raise the question of *why* this typological pattern in (60) should hold. Importantly, this pattern is rather curious and unexpected if 'discontinuous past' were simply another tense feature, on par with PAST, PRESENT, and FUTURE. Even the relatively rare 'graded' tense categories (such as 'Hodiernal' or 'Hesternal' Past) can (i) appear in obligatory tense languages, or (ii) co-occur with regular 'pure' past tense (Hayashi 2011, Cable 2013). Why, then, should a DISCONTINUOUS PAST feature be any different? Why should it seem to be incompatible with (i) its marker being obligatory, or (ii) there being a separate realization of 'pure' past tense in the language? [28]

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[26] The principle potential exception to this generalization that Plungian & van der Auwera note is that of Washow, a language which seems to have a discontinuous past (dubbed a 'defunctive' by specialists), but which also contains various 'graded pasts' (Jacobsen 1964). However, it should be noted that Washow does exhibit property (60a); verbs without tense marking can refer to past states/events. As regards the (optional) graded pasts in the language, Cable (2013) argues that 'graded past' markers in other languages are not actually 'tenses', in the usual sense that semanticists give that term (see Section 6). Rather, such 'graded past' markers are actually modifiers within the Aspectual projection. Thus, it remains very much an open question whether Washow truly counterexemplifies the generalization in (60). (Special thanks to Ryan Bochnak for crucial discussion of this point.)

[27] Note that this claim would be falsified, were Russian *bylo* indeed an instance of the same phenomenon as the 'discontinuous past' markers generally discussed here. Recall, though, that Russian *bylo* exhibits properties that suggest it should be kept apart from the Tlingit decessive and other cases of 'discontinuous past' (Footnote 22).

[28] Plungian & van der Auwera (2006: 344-345) speculate that there may be a kind of functional/historical answer to these questions:

> "The question arises, whether a morphologically non-standard tense marker is always semantically non-standard, i.e. expresses a kind of discontinuous past value. Such a strong correlation would be tempting, though the data we dispose of are insufficient to prove or disprove it. Nevertheless, the correlation may be heuristically useful…
>
> Generally speaking, this formal peculiarity of the discontinuous past markers can be accounted for as an iconical device reflecting their semantics. In fact, what the discontinuous markers do is change the default interpretation of the verbal form they apply to. This change amounts to introducing a temporal (or notional) break between the point of reference and the situation." (Plungian & van der Auwera 2006: 344)

Their idea seems to be that the optionality of the tense marker iconically signals that its meaning is distinct from that of a typical, obligatory past tense. It's unclear to me, however, how exactly the 'discontinuity' aspect of the meaning arises (rather than some other imaginable divergence from a 'pure' past tense interpretation). Nevertheless, the

With these questions in mind, let us consider instead another possibility. Suppose that, despite the facts in (27)-(30), the Tlingit decessive – and by extension, all putative cases of 'discontinuous past' – were in its lexical semantics simply an optional, 'pure' past tense. That is, suppose that only the 'past inference' in (1a) were part of the lexical meaning of these 'discontinuous past' markers. Let us also suppose that the special inferences in (1b) could somehow be derived as *pragmatic inferences* arising from the very properties in (60a) and (60b). It would, of course, then trivially follow that *only* languages and morphemes exhibiting the properties in (60a) and (60b) would also trigger the special implications in (1b). That is, we would straightforwardly predict that the 'discontinuity' implications in (1b) would be restricted to morphemes/languages for which (60a,b) hold, and so the typological pattern would be accounted for.

For this reason, the typological facts in (60) provide some additional motivation for exploring an analysis where the inferences in (1b) are not part of the lexical semantics of the items in question, but are instead somehow derived via pragmatics. Let us now attempt to construct just such an account.

6. The Tlingit Decessive and 'Discontinuous Past' as Purely Optional Past Tenses

There are three key questions that must be answered by any account seeking to derive the special implications in (1b) as pragmatic inferences arising from the meaning in (1a).

(61)   **Three Key Analytic Challenges to a Non-Semantic Analysis of (1b)**

   a.   How does the **cessation implication** in (1bi) follow as a result of pragmatic reasoning from the meaning of a past imperfective?

   b.   Why can the cessation implication in (1bi) *not* be cancelled like an English cessation implicature (27)-(30)?

   c.   How do the **cancelled result** and **unexpected result** implications in (1bii) follow as a result of pragmatic reasoning from the meaning of a past perfective?

These questions will be addressed in turn as the proposed analysis is constructed. The following subsection develops an analysis of the cessation implication that answers (61a,b). Section 6.2 then turns to the cancelled result / unexpected result implications, and an answer to (61c).

6.1   The Cessation Implication of Non-Perfective Discontinuous Past

Recall that the cessation implication in (1bi) occurs for the following aspectual categories: stative imperfectives, eventive imperfectives, habituals, futures, potentials. For reasons of space, the analysis developed below will be illustrated only with stative imperfective forms; however, the reader can confirm that this account is easily extended to the other non-perfective categories.

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formal analysis proposed in Section 6 will follow Plungian & van der Auwera (2006) in attempting to derive the additional inferences in (1b) from the optional status of the markers in question.

Any answer to question (61b) will necessarily assume some analysis of 'English-style' cessation implicatures (22). Furthermore, as we'll see below, our proposed answer to (61a) builds upon a particular theory of such implicatures. We'll therefore begin by laying out that analysis of the English data in (22); this account builds heavily upon the work of Altshuler & Schwarzschild (2013), though it differs from that prior work in significant respects.

To begin, let us lay out various assumptions regarding the syntax and semantics of tense. Following much of the prior literature on tense (Abusch 1997, Kratzer 1998, Matthewson 2006, *inter multa alia*), I assume that syntactic T(ense)-heads function as temporal anaphors, directly referring to a so-called 'Topic Time' (TT). Tense features, such as PAST are thus pronominal features, and so introduce presuppositions that constrain the reference of the T-heads. These ideas can be formalized as in (62) below.

(62)   **Formal Semantics of Tense**
    a. $[[\ [_{\text{Tense}} \ \text{PST} \ ]_i \ ]]^{w,t,g}$ = $g(i)$,   **only if $g(i) < t$; undefined otherwise**
    b. $[[\ [_{\text{Tense}} \ \text{PRES} \ ]_i \ ]]^{w,t,g}$ = $g(i)$,   **only if $g(i) = t$; undefined otherwise**

As shown in (62a), a T-head bearing the feature PAST (PST) is a temporal pronoun, and so bears a pronominal index *i*. Relative to an evaluation world *w*, evaluation time *t*, and a variable assignment *g*, the denotation of such a T-head is simply the value of its index, $g(i)$, *just as long as that value g(i) precedes the evaluation time t*. Consequently, if a T-heads bears PAST, it can only ever end up denoting times that are in the past of the evaluation time *t*. A similar semantics can be given for PRESENT (PRES) T-heads (62b), where they end up only ever denoting times that are equal to the evaluation time *t*.

In this way, the semantics in (62) instantiates Klein's (1994) view that tense features serve to constrain the relation between the Topic Time (the denotation of the tense head) and the Utterance Time (the evaluation time of the matrix clause). I will also follow much of the prior literature on aspect by assuming the Kleinian hypothesis that aspectual features serve to constrain the relation between the Topic Time and the Event Time (Klein 1994). That is, as formalized in (63), Aspect heads take as argument a property of events (denoted by the VP), and return a property of times, ultimately predicated of the Topic Time denoted by the Tense head.

(63)   **Formal Semantics of Aspect**

    a. $[[\ [_{\text{Aspect}} \ \text{IMPFV} \ ] \ ]]^{w,t,g}$ = $[\ \lambda Q_{<\epsilon t>} : [\ \lambda t' : \exists e. \ Q(e) \ \& \ t' \subseteq T(e) \ ] \ ]$
    b. $[[\ [_{\text{Aspect}} \ \text{PFV} \ ] \ ]]^{w,t,g}$ = $[\ \lambda Q_{<\epsilon t>} : [\ \lambda t' : \exists e. \ Q(e) \ \& \ T(e) \subset t' \ ] \ ]$

For example, an Aspect head bearing imperfective (IMPFV) will take as argument the denotation of the VP (Q) and will return a predicate that is true of the topic time *t'* *iff* there is an event *e* of the kind denoted by the VP, such that the topic time *t'* is contained with the Event Time of *e* (T(e)). Thus, IMPFV contributes the information that the TT is contained with in the ET. A similar denotation is offered for perfective aspect (PFV) in (63b), which implements the classic notion that perfective aspect locates the ET within the TT.

The denotations in (62) and (63) fit most naturally within a syntax where the Aspectual Projection is complement to the Tense head, as is illustrated by the LF in (64b) below.

(64)   **The Syntax of Tense and Aspect, Part 1**

      a.   <u>Sentence:</u>   Scotty was anxious.

      b.   <u>LF of (64a), In a Context with Salient Past Topic Time:</u>
             [$_{TP}$ [$_T$ PST]$_i$ [IMPFV [Scotty be anxious]]]

      c.   <u>Predicted Truth-Conditions:</u>
             $[[(64b)]]^{w,t,g}$ is defined only if $g(i) < t$
                                     if defined, is true *iff*

             $\exists e.$ anxious(e) & Thm(e) = Scotty & $g(i) \subseteq T(e)$
             'There is an eventuality e of Scotty being anxious whose run-time T(e) contains
             the topic time g(i).'

As shown in (64c), in contexts where there is a salient past Topic Time *g(i),* sentence (64a) is predicted by our semantics to be true *iff* there is an eventuality (state) of Scotty being anxious which contains the TT. What, though, of contexts where there *isn't* any such salient past time? That is, what about contexts like those in (22a), where the past tense sentence is uttered 'out of the blue'? I will assume that in such contexts – *i.e.*, when there is no salient antecedent available for a tense head – a special 'rescuing' operation of existential closure can apply and bind the T-head. The intended LF and predicted truth-conditions are as represented in (65a,b) below.

(65)   **The Syntax of Tense and Aspect, Part 2**

      a.   <u>LF of (64a), In a Context with No Salient Past Topic Time:</u>
             [$_{TP}$ $\exists_i$ [$_{TP}$ [$_T$ PST]$_i$ [IMPFV [Scotty be anxious]]]]

      b.   <u>Predicted Truth-Conditions:</u> [29]
             $[[(65a)]]^{w,t,g}$ is true *iff*

             $\exists t'. t' < t$ & $\exists e.$ anxious(e) & Thm(e) = Scotty & $t' \subseteq T(e)$
             'There is a past time t' and there is an eventuality e of Scotty being anxious whose
             run time T(e) contains the past time t'.'

Thus, in an 'out of the blue' context such as (22a), sentence (64a) is predicted to assert that there *is some* past time t' at which Scotty is anxious.

      Now, recall that it is exactly such 'out of the blue' contexts in English that trigger English-style cessation implicatures. As originally proposed by Altshuler & Schwarzschild (2013), our existential truth-conditions in (65b) can predict the appearance of those implicatures, if we also add the crucial assumption in (66).

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[29] Note that when a pronoun is existentially bound, its presuppositional features effectively serve to place additional restrictions on the existential quantification (Cable 2013).

(66)   **The Open Interval Hypothesis (Altshuler & Schwarzschild 2013)** [30]
        The run-time of an eventuality (state or event) is an open interval. That is, if e is an
        eventuality and t' is a temporal instant contained within T(e) (t' $\subseteq$ T(e)), then there is a
        temporal instant t'' such that t'' < t' and t'' is also contained within T(e) (t'' $\subseteq$ T(e)).

According to the Open Interval Hypothesis above, there is no 'first instant' in the Event Time of
any eventuality. For any temporal instant in the run-time of an event or state, there is always an
(infinitesimally) prior temporal instant preceding it in the run-time. Note that, as discussed by
Altshuler & Schwarzschild (2013), this in no way implies that eventualities do not have a
'beginning'; indeed, it is difficult to find any truly substantive metaphysical consequences of the
hypothesis in (66). Nevertheless, as first observed by Altshuler & Schwarzschild, this hypothesis
does give us a possible explanation of the cessation implicatures in (22). In particular, (66)
predicts that such implicatures should follow as simple cases of scalar implicature.
        To see this, let us compare the LF and truth-conditions in (65) to that of a (pragmatically
competing) present tense sentence.

(67)   **Present Tense Variant of (64a)**

        a.   <u>Sentence:</u>   Scotty is anxious.

        b.   <u>LF of (67a):</u>   [TP [T PRES]i [IMPFV [Scotty be anxious]]]

        c.   <u>Predicted Truth-Conditions:</u>
                $[[(64b)]]^{w,t,g}$ is defined only if g(i) = t
                                      if defined, is true *iff*

                $\exists$e. anxious(e) & Thm(e) = Scotty & g(i) $\subseteq$ T(e)
                'There is an eventuality e of Scotty being anxious whose run-time T(e) contains
                the topic time g(i) (which is equal to the utterance time t)'

Importantly, because of the Open Interval Hypothesis (66), the truth-conditions in (67c) are
strictly stronger than the truth-conditions in (65b). Note that since the utterance time is (by
common assumption) a temporal instant, (67b) and assumption (66) would together entail that
there is a time t' prior to the utterance time t (= g(i)) such that t' $\subseteq$ T(e). But, this of course is
simply what the truth-conditions in (65b) state. Those latter truth-conditions, however, in no way
entail that the Event Time T(e) encompasses the utterance time t as well as the past time t'.
        Consequently, in a context where there is no salient past Topic Time, such as in (22), a
past tense sentence will be *strictly weaker* than a corresponding present tense sentence. For this
reason, standard Gricean reasoning will lead to an inference that the present tense variant is *false*
(or not known to be true). In this way, the assumptions in (62)-(66) can account for the
appearance of (English-style) cessation implicatures in 'out-of-the-blue' contexts like (22).
Importantly, they can also account for the cancellation of such implicatures in contexts like (25)
and (26), where there *is* a salient past Topic Time. Note that in such contexts, the existential

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[30] Altshuler & Schwarzschild (2013) restrict this hypothesis to statives. Consequently, their account doesn't
immediately extend to the cessation implicature in (22b). I propose to extend their analysis to such cases by
extending the assumption in (66) to eventive predicates as well.

closure in (65) will not occur, and a past tense sentence will have the LF and truth-conditions in (64). Furthermore, the truth-conditions in (64c) are simply incompatible with the present-tense truth-conditions in (67c); the two sets of truth-conditions make incompatible demands of the Topic Time $g(i)$. Since the truth-conditions in (64c) and (67c) are incompatible, neither is stronger or weaker than the other, and so no Gricean scalar inference will be triggered upon the utterance of (64a) in a context with a possible antecedent for '[$_T$ PST]$_i$'. We therefore predict the absence of the cessation implicature in such contexts.

   With this as background, let us now turn our attention to languages with 'optional past tense', and let us see whether the special cessation implication of such optional tenses (1bi) can follow in a similarly principled way.

   To begin, recall that in such languages, simple unmarked imperfective verbs can describe events or states that held prior to the utterance time. Given our assumptions in (62)-(63), it must be possible in such languages for the syntactic head denoting the Topic Time to denote a past time without there being any PAST feature on that head. I will follow the work of Matthewson (2006) and others by assuming that in such languages, sentences containing 'simple unmarked' verbs actually contain a phonologically empty T-head, one whose featural value is NON-FUTURE (NFUT). This NFUT feature is given the semantics below.

(68) **The Semantics of Non-Future Tense**
   [[[$_{\text{Tense}}$ NFUT]$_i$]]^{w,t,g} = $g(i)$,   **only if $\neg (t < g(i))$; undefined otherwise**

Thus, a T-head bearing NFUT will only ever denote temporal intervals that do not follow the evaluation time t. An immediate consequence of this semantics is that such NFUT T-heads can easily denote temporal intervals that *precede* the evaluation time t. They can also denote the evaluation time t itself. Thus, the semantics in (68) correctly predicts that 'simple unmarked' verbs in these languages can describe events holding either in the past or the present.

   A second, more interesting consequence of (68), however, is that T-heads bearing NFUT are also predicted to denote temporal intervals covering *both* the utterance time t and a past time t'; such intervals, after all, would not follow t, just as long as t were the final point in the interval. Such 'past-cum-present' intervals, however, could never serve as Topic Times in languages possessing only PAST and PRESENT, whose semantics in (62) would require the denotation of T to either strictly precede or be equal to the utterance time. Their surprising possibility in languages with 'optional past tense', however, is shown by Matthewson (2006), who observes that in contexts like (69a), speakers of Lillooet (Salish; British Columbia) accept sentences like (69b).

(69) **Topic Times Covering Both Past and Present in Lillooet (Matthewson 2006)**

  a. <u>Scenario:</u> Theresa threw up a few minutes ago. Charlie is throwing up now.

  b. wat'k'   kw [**s-Theresa**   **múta7 s-Charlie**].
     vomit.PFV   DET **NOM-Theresa** **and** **NOM-Charlie**
     Theresa and Charlie threw up / are throwing up

Note that sentence (69b) has no straightforward English translation in context (69a). The issue is, of course, that while Theresa *did* throw up, Charlie *is currentl*y throwing up. Thus, to translate (69b) directly, we would have to simultaneously translate *wat'k'* 'vomit' as *threw up* (PAST) and

is throwing up (PRESENT). Importantly, however, the semantics in (68) would easily predict the possibility of (69b) in scenario (69a). The predicted LF and truth-conditions of (69b) are as in (70) below.

(70)   **Non-Future Topic Time in Lillooet**

a.   <u>LF of (69b):</u> [$_{TP}$ [$_T$ NFUT]$_i$ [PFV [[Theresa and Charlie] vomit]]]

b.   <u>Truth-Conditions:</u>
[[(70a)]]^{w,t,g} is defined only if $\neg\,(t < g(i))$
                              if defined, is true *iff*

$\exists$e. vomit(e) & Ag(e) = T+C & T(e) $\subseteq$ g(i)
'There is an event e of Theresa and Charlie throwing up whose run time T(e) is contained in the topic time g(i).'

Note that if *g*(*i*) were a temporal interval covering the time of Theresa's vomiting and extending up to the utterance time, it would both satisfy the presupposition of NFUT and render the truth-conditions in (70b) true.

　　We find, then, that the possibility of sentences like (69b) in contexts like (69a) lends important support to the notion that 'optional past tense' languages possess the peculiar NON-FUTURE tense in (68). It should be noted, then, that parallel data can be found in Tlingit as well.

(71)   **Topic Times Covering Both Past and Present in Tlingit**

a.   <u>Scenario:</u> You are watching two kids, Tom and Anne. Your friend Linda is downstairs reading. First, Tom starts jumping around the room. You tell him to stop, and he does. Soon, though, Anne starts jumping around the room. At this point, Linda opens the door and asks "What is all the noise up here?"

b.   <u>Tlingit Sentence Offered:</u>
Táam ka   Anne   át has wujik'éin.   (MD)
Tom and Anne   PFV.3plS.jump.around
Tom and Anne jumped around/are jumping around.

　　If simple, unmarked verbs in 'optional past tense' languages bear 'NFUT' in (68), this raises a rather straightforward analysis of the optionality of past tense in those languages. Let us simply suppose that past tense morphology in those languages has precisely the same syntax and semantics as proposed for English past tense in (62)-(65). Note that PAST tense will effectively be 'optional' in these languages, merely because the additional existence of NON-FUTURE would entail that in sentences describing past eventualities, the T-head needn't bear the 'PST' feature. That is, tense *per se* is not 'optional' in these languages, there is simply more than one tense allowing for the Topic Time to precede the Utterance Time.

　　But, if the Tlingit decessive and other instances of 'discontinuous past' are semantically no different from 'pure' past tense in English, why do they bring with them the additional special

inferences in (1b)? Furthermore, why are sentences like (27)-(30) rejected by Tlingit speakers, while parallel sentences in English are entirely acceptable?

To begin with the latter question, let us note a peculiar property of the contexts in (27)-(30): in all of these contexts, both a past time *t'* and the Utterance Time *t* are highlighted as equally topical and relevant. In scenario (27a), we're discussing Joe's activities all day, both earlier and right now. In scenario (28a), we're discussing the state of the weather today, both earlier and right now. In scenario (29a), it's quite pertinent to the addressee whether Joe is singing *right now*, and in scenario (30a), the activities of Joe at present are again of much importance and interest to the addressee. Viewed in this light, it seems that speakers of Tlingit reject the use of PAST in contexts where the Utterance Time is as 'topical' as an available antecedent past time.

Why should this be the case, though, and why should English be any different? Recall now that the key difference between the tense systems of these two languages is the presence of NFUT (68), a tense that permits the Topic Time to be an interval covering both the Utterance Time and a salient past time (69)-(70). With this in mind, suppose there were a principle that demanded the Utterance Time (UT) to be contained within the Topic Time (TT), whenever the former were 'sufficiently topical'. Since PST (62a) necessarily excludes the UT from the TT, such a principle would preclude the use of PST in contexts like (27a)-(30a). However, since NFUT (68) would allow the TT to contain both the UT and a past topic time, the imagined principle would allow for NFUT in such cases. Finally, let us imagine that the principle could be stated in a way that rendered it vacuous in languages, like English, where the inventory of tenses generally precludes any TT from containing both the UT and a past time. It would, of course, follow that in such English-like, 'obligatory past tense' languages, sentences like those in (26) would be entirely acceptable.

Thus, a principle of the kind imagined here could explain why sentences like (27b)-(30b) are rejected by Tlingit speakers, while parallel sentences in English are entirely acceptable. For a concrete, formalized statement of this principle, let us consider the following:

(72)   **Include Topical UT inside the TT, Whenever Possible**
   If all the following conditions hold, then the speaker *must* use sentence S1, and not S2:
   a.   Sentences S1 and S2 are identical except for their T-heads (T1 and T2).
   b.   Both the Utterance Time *t* and some past time *t' < t* are salient and relevant.
   c. $[[\text{T1}]]^{w,t,g}$ contains both *t'* and *t*, while $[[\text{T2}]]^{w,t,g} = t'$.
   d.   Both S1 and S2 are 'assertable' (i.e., speaker's knowledge entails them).

As we'll see in a moment, the principle proposed above can offer answers to both the key questions in (61a) and (61b). First, though, let us briefly note that (72) may itself be a specific subcase of the following more general principle:

(73)   **Include as Many Topical Times inside the TT as is Possible**
   If all the following conditions hold, then the speaker *must* use sentence S1, and not S2:
   a.   Sentences S1 and S2 are identical except for their T-heads (T1 and T2).
   b.   **Both the times *t'* and *t''* are salient and relevant**.
   c. $[[\text{T1}]]^{w,t,g}$ **contains both *t'* and *t''*, while $[[\text{T2}]]^{w,t,g} = t'$.**
   d.   Both S1 and S2 are 'assertable' (i.e., speaker's knowledge entails them).

The more general principle in (73) could account for the judgment in (74b), regarding the discourse in (74a).

(74) a. <u>Discourse:</u> Dave jumped, then Fred jumped. Mary was dancing.
      b. <u>Judgment:</u> The time of Mary's dancing includes *both* jumping events.

Note that the first sentence in (74a) introduces the time of Dave's jumping and the time of Fred's jumping as salient, topical past times. The principle in (73) would therefore require the T-head of *Mary was dancing* in (74a) to be an interval containing *both* those past times, which accords with the intuition that the latter sentence places the time of both 'jumpings' with the Event Time of Mary's dancing. Be this as it may, since only the more specific principle in (72) is necessary for the proposed account, I will reserve judgment regarding (73).

   With the principle in (72) at hand, we can now offer an answer to our first key analytic question (61a); the cessation implication in (1bi) could now be derived as follows.

(75) **The Pragmatic Reasoning Generating Cessation Implication (1bi)**
      Let us assume that the speaker has used a past tense (non-perfective) verb in a context where the Utterance Time is topical/relevant/salient.

  a. By assumption, both Utterance Time t and past time $t' < t$ are salient and relevant. By assumption, the speaker has used a past tense sentence S2.

  b. *They did not use a non-future tense sentence S1, with a T-head denoting an interval covering both t' and t*

  c. S1 and S2 are identical except for the T-node (T1 and T2).

  d. $[[\text{ T1 }]]^{w,t,g}$ contains both t' and t, while $[[\text{ T2 }]]^{w,t,g} = t'$.

  e. Given (72), *it must be that the non-future sentence S1 is not assertable.*

  f. Past tense sentence S2 entails that there's a state/event of the relevant sort containing past time t'

  g. Non-Future tense sentence S1 entails that there's a state/event of the relevant sort containing past time t' *and the utterance time t*

  h. Therefore, the speaker's knowledge entails that that there is an eventuality of the relevant sort containing past time t' but either:
   (i) They don't know whether that past eventuality continues into present, or
   (ii) They know that the past eventuality *doesn't* continue into present

Thus, the principle in (72) predicts that listeners will infer from a past tense sentence that the past eventuality in question does not extend into the present, *just as long as* (i) the Utterance Time is equally topical and relevant, and (ii) the speaker is assumed to know whether the past eventuality extends into the present or not. There are three important aspects of this prediction to highlight.

First, the inference predicted in (75h,ii) is that *the particular* past eventuality in question fails to extend into the present. The inference is *not* that there is no other eventuality of the kind in question holding at present. That is, the inference in (75h,ii) is entirely consistent with there being a *distinct* state/event of the kind denoted by the VP holding at the Utterance Time, just as long as that other state/event is not continuous with the state/event holding at the past time *t'*. Consequently, our account in (75) correctly predicts the crucial difference between the cessation implication in (1bi) and an English-style cessation implicature (21)-(22).

Secondly, the account offered in (72)-(75) offers an answer to our key analytic question in (61b). Basically, the crucial difference between the cessation implication in (1bi) and the cessation implicatures of languages like English is that the two inferences are based in two entirely different pragmatic principles. Under our analysis in (62)-(67), an English-style cessation implicature is a straightforward case of Gricean scalar implicature; therefore, it can be 'cancelled' or 'suspended' just like any such implicature. However, under our analysis in (72)-(75), the cessation implication in (1bi) is not a result of Gricean reasoning; neither the Maxims nor the Cooperative Principle play any role. Rather, the inference is directly enforced by the special principle in (72). Like certain other pragmatic principles – *e.g.* 'Maximize Presupposition' (Heim 1991, Percus 2006, Singh 2011, Schlenker 2012) – our special principle in (72) is strictly enforced, and lacks the sort of '*ceteris paribus*' clause that presumably allows for Gricean implicatures to be 'cancelled'. In other words, in contexts (27a)-(30a), sentences (27b)-(30b) are straightforwardly in violation of principle in (72), and so they are necessarily rejected by speakers. Parallel sentences in English, however, are acceptable in parallel contexts because (i) English lacks NFUT tense, and so principle (72) would not militate against PST in such contexts, and (ii) a cessation implicature in English is a scalar implicature, and so can be overridden by a myriad of different factors in context (such as matters of 'Brevity' and 'Relevance').

Finally, although the cessation implication in (1bi) cannot be cancelled in *exactly* the way an English cessation implicature is, our account in (72)-(75) does predict the ways in which the inference *can* be pre-empted. In particular, we correctly predict that the cessation implication will be absent in contexts where (i) the speaker is simply *ignorant* of whether the past eventuality extends into the present (Section 5.2), or (ii) the Utterance Time is not 'topical' or 'conversationally relevant' (Section 5.4). To begin, note that the conclusion in (75h) is disjunctive: *either* (i) the speaker doesn't know whether the past event extends into the present, *or* (ii) they know that it doesn't. It is only when the first of these two disjuncts is ruled out that the listener can infer the second, and thus the cessation implication (1bi). Thus, in contexts where the first disjunct holds – where the speaker is known (or asserted) to be ignorant of the present – the cessation implication will not be generated. Similarly, the reasoning in (75) crucially relies upon the assumption that the Utterance Time is as relevant and topical as any antecedent past time (75a). In contexts where that assumption fails – where the present is not conversationally relevant – the reasoning in (75) is simply preempted.

We find, then, that the hypotheses in (72)-(75) can provide answers to the central analytic questions in (61a,b), and can predict two key environments where the cessation implication (1bi) of 'discontinuous past' non-perfectives fails to be triggered.[31] In the following subsection, we will turn our attention to the special implications of 'discontinuous past' with perfective verbs.

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[31] We have yet, however, to explain the absence of the cessation implication in the specific textual examples collected in Section 5.1, or in the embedded clauses of Section 5.3. Regarding the former, it's reasonable to (provisionally) assume that in the narratives in question, the utterance time is not relevant – or is sufficiently 'non-

6.2   The Implications of Discontinuous Past with Perfective Verbs

Under the view that we're currently pursuing, the implications in (1bii) are pragmatic inferences that are somehow drawn when 'optional past tense' appears on a perfective verb. As we'll see presently, the hypotheses developed in (72)-(75) can easily account for the 'cancelled result' implication, once two additional assumptions are introduced. Furthermore, we'll see that those new assumptions can also straightforwardly account for the 'unexpected result' implication.

　　　To begin, let us observe an interesting fact regarding the 'cancelled result' implication: it is not confined just to languages with optional past tense. Citing Dahl (1985), Plungian & van der Auwera (2006: 325) note that languages lacking 'discontinuous past' can often nevertheless express the 'cancelled result' meaning of discontinuous past perfectives, via use of a *pluperfect* (past perfect). Such 'cancelled result' implications with pluperfects were observed earlier in (24a), repeated below.

(76)   **Cancelled Result Implicature with Pluperfect (Dahl 1985)**
　　　　Q:　　　Why is it so cold in here?
　　　　A:　　　I **had** opened the window (earlier).　　[implicature: window is closed now]

Thus, pluperfects in 'obligatory tense' languages seem to exhibit one of the characteristic uses of 'discontinuous past'. Moreover, the reverse is also true. That is, Plungian & van der Auwera (2006: 336-339) note that within connected narratives, 'discontinuous past' perfective often plays the same role that pluperfects do in 'obligatory tense' languages, namely, signaling that the event/state in question occurs prior to the main events of the past narrative. They illustrate this point with the translation of a Bamana narrative, excerpted below. Following their notation, the translation of a (plain) perfective Bamana verb is underlined, while the translation of a 'discontinuous past' perfective is boldfaced.

(77)   **Discontinuous Past Perfective in Bamana Marking 'Out-of-Sequence' Past Events**

　　　So the girls came to pick her up. They came and found that her stepmother had made her work. The stepmother **had made** the girl pound the fonio, to pound her fonio first.
　　　(Plungian & van der Auwera 2006: 338)

As indicated above, 'discontinuous past' is used to mark the perfective verb describing an event preceding the past event of the main narrative, exactly as the pluperfect does in the English translation. Such usage can also be observed for the decessive ('discontinuous past') perfectives of Tlingit. The following examples, taken from naturally produced texts, are paired with their original context, to demonstrate that the decessive perfective verb introduces an event preceding the main events of the past narrative.

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topical' – that these examples are just an instance of the phenomenon discussed in Section 5.4. Regarding the embedded clauses of Section 5.3, space requires that these be left as a topic for future research. In brief, however, if we were to suppose that such cases involve a 'temporal *de re*' reading of the embedded tense, whereby the embedded past undergoes *res*-movement into the matrix clause, then (72) would fail to apply to such sentences, simply because the embedded tense would no longer be the T-head of the embedded clause. (Instead, the TP of the embedded clause would be headed by a bound trace, lacking tense features.)

(78) **Decessive Perfective in Tlingit Marking 'Out-of-Sequence' Past Events** [32]

    a.   Wudutaag**éen**   áwé.
           3O.PFV.IndefS.harpoon.**DEC**   FOC
           *He **had been** harpooned.*   (Dauenhauer & Dauenhauer 1987: 112; line 77)
           <u>Surrounding Context</u>:
           "As he was entering the house, he saw that man lying there. A harpoon point was stuck in him. It was a harpoon point. **He had been harpooned.**"

    b.   Wé   smallest <u>k</u>u.aa   áwé   a<u>x</u>áa   ash shóodei   awushád**een**.
           that   smallest though   FOC   paddle   his end.toward 3O.PFV.3S.grab.**DEC**
           *But the smallest one, the one who **had picked** up the paddle towards him…*
           (Dauenhauer & Dauenhauer 1987; 120; line 198)
           <u>Surrounding Context</u>:
           "They crunched the boat between their jaws. Those things he carved were doing this. **But the smallest one, the one who had picked up the paddle towards him,** fell on a piece of the boat."

    c.   Ch'a   wáa sá, ch'a néekwdein   <u>k</u>udaanéi**yin**   ch'a a yá<u>x</u>.
           just   how Q   just painfully   IndefO.PFV.3S.do.**DEC** just it like
           *Just as he **had done** painful things to them.* (Black *et al.* 2008: 365; line 657)
           <u>Surrounding Context</u>:
           "He was stabbed in the side with a spear by each man. **Just as he had done painful things to them.**"

    d.   A<u>x</u>   ee'sh   a <u>y</u>at <u>x</u>'awoo`lyoo'w**un**.[33]
           my   father   3O.PFV.3S.adopt.**DEC**
           *My father **had adopted** her.*   (Williams, Williams & Leer 1978: 112; line 234)
           <u>Surrounding Context</u>:
           "She would say to me – **my father had adopted her** – 'my brother's child' that is how she would speak to me."

    We find, then, that there is an interesting similarity between 'discontinuous past' perfectives and (plain) past perfects. With this in mind, it is worth noting that Plungian & van der Auwera themselves sometimes equivocate over whether the aspectual marking in their crucial examples is properly labeled 'perfective' or 'perfect'. The 'PF' gloss that they employ for such marking throughout their paper is defined as "perfect(ive)" (Plungian & van der Auwera 2006: 346), suggesting that the forms in question are sometimes characterized as 'perfects' in the source grammars. Furthermore, such marking is often in their examples freely translated into English as a perfect (see (5b), (17a,b), (18a)).

    This may, of course, be due to the fact that the languages in question *lack* a distinct 'perfect' morphology, and collapse together in one verbal form the functions of both 'perfect'

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[32] It should also be noted that the decessive perfectives in these examples could also plausibly be argued to lack the 'cancelled result' and 'unexpected result' implications in (1bii).

[33] The narrator of (78d) was a speaker of Tongass Tlingit, and so the example here employs a different orthography from that used for the other Tlingit sentences in this paper (see Footnote 23).

and 'perfective' aspect. Such, after all, seems to be the case in Tlingit. That is, there is in Tlingit no distinction between 'perfect' and 'perfective' aspect, and the verbal morphology that Tlingit grammarians refer to as 'perfective' often has a meaning closer to that of the English present perfect than the English past perfective (simple past) (Leer 1991: 345, 366, 377). Such present perfect interpretations of morphologically 'perfective' verbs are quite apparent in sentences containing the adverb *yeedát* 'now'. As shown below, past perfectives generally cannot co-occur with an adverb meaning *now*. This is, of course, predicted by our semantics in (62)-(63); PAST would require the Topic Time to strictly precede the Utterance Time, while *now* would require the Topic Time to equal the Utterance Time.

(79)   **Perfective vs. Present Perfective and *Now***

   a.   (i)   <u>Present Perfect:</u> Dave was asleep, but now he**'s woken** up.

         (ii)   <u>Perfective (*i.e.*, Simple Past):</u>   ?? Dave was asleep, but now he **woke** up.

   b.   (i)   <u>Present Perfect:</u>
                Dave used to live with his father, but now he**'s bought** a house.

         (ii)   <u>Perfective (*i.e.*, Simple Past):</u>
                ?? Dave used to live with is father, but now he **bought** a house.

On the other hand, since a present perfect bears PRESENT there is no incompatibility with the adverb *now*.[34] With this in mind, let us observe that the Tlingit adverb *yeedát* 'now' is entirely compatible with (morphologically) 'perfective' verbs. Note that in such cases the 'perfective' aspect is most naturally translated into English as a perfect (see (31c) above, as well).

(80)   **Tlingit Perfective Functioning as a Present Perfect**

   a.   Jáan táayin.   Yeedát ku.aa   **shawdinúk**   (WF, MD)
         John IMPFV.3sgS.sleep.DEC   now   though   **PFV**.3sgS.wake.up
         John was sleeping, but now he's woken up.

   b.   Jáan du éesh xánx'   áwé   yéi teeyín.
         John his father vicinity.at FOC   IMPFV.3sgS.live.DEC

         Yeedát ku.aa   hít   **awsi.oo**.   (WF)
         now   though house   3O.**PFV**.3sgS.bought
         John used to live with his father, but now he's bought a house.

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[34] I also assume, following most of the semantic and typological literature on aspect, that the tense feature PRESENT is incompatible with PERFECTIVE aspect. One popular explanation for this gap, formalized in a myriad of different ways, is that the combination of 'PRES' and 'PRV' would require the Utterance Time to contain the Event Time (62)-(63), which would be incompatible with the fact that UT is (or is at least 'conceived as') a temporal instant (Bennett & Partee 1978).

It therefore seems plausible that so-called 'perfective' morphology in Tlingit – and by extension, in other languages where 'discontinuous past' exhibits the implications in (1bii) – is ambiguous between a PERFECTIVE interpretation (63b) and an interpretation as PERFECT.[35] But, what *is* the interpretation of PERFECT (PERF)? This is an extremely controversial question within the literature on aspect, and there are both several general hypotheses, as well as numerous ways of formalizing each one. Here, however, I will follow such works as Moens & Steedman 1988, Kamp & Reyle 1993, and Kamp *et al.* 2013, and adopt a 'result state' approach to the perfect. Under this general approach, PERF aspect asserts that the TT strictly follows the ET, and is located within a state 'resulting' from the event in question. Thus, a present perfect like *Dave has left* would entail that there is an event of Dave leaving that precedes the UT, and that the UT is located within some state 'resulting' from that leaving event. This key idea can be formalized as in (81) below.

(81)   **Formal Analysis of Perfect Aspect**

     a.   <u>Semantics of 'PERF'</u>

          $[[\text{ PERF }]]^{w,t,g} = [\lambda Q_{<\varepsilon t>} : [\lambda t' : \exists e.\ Q(e)\ \&\ T(e) < t'\ \&\ t' \subseteq T(RES(e))]]$

     b.   <u>LF of '*Dave has left*'</u>: $[_{TP} [_T \text{ PRES }]_i [\text{ PERF } [\text{ Dave leave }]]]$

     c.   <u>Predicted Truth-Conditions:</u>

          $[[(81b)]]^{w,t,g} = $ defined only if $g(i) = t$, when defined, is T *iff*

          $\exists e.\ leave(e)\ \&\ Agent(e) = Dave\ \&\ T(e) < g(i)\ \&\ g(i) \subseteq T(RES(e))$
          '*There is an event of Dave leaving, whose ET precedes the UT, and the UT is contained with the time of the result state of e* (T(RES(e)))'

Importantly, under this semantics, we can capture the 'cancelled result' implication of a pluperfect (past perfect) in languages like English (76). To begin, note that a 'result state' is *per force* a state, and so is an eventuality. Consequently, our Open Interval Hypothesis (66) would entail that within such a result state RES(e), there is no 'first instant'; that is, if t' is a temporal instant contained within T(RES(e)), then there is a temporal instant t'' such that t'' < t' and t'' is also contained within T(RES(e)). With this at hand, the 'cancelled result' implicature of (76) can be viewed as merely an instance of a 'cessation implicature'. After all, in an 'out-of-the-blue' context like (76), a pluperfect (past perfect) will require existential closure of the T-head (65). The resulting LF will carry existential truth-conditions, stating that *there is* a past time *t'* contained within a 'result state' of the event *e*. However, a *present* perfect would entail that the Utterance Time *t* is contained within such a result state, and so given the Open Interval Hypothesis (66), would also entail the existential truth-conditions of the corresponding pluperfect. Thus, present perfect would end up being strictly stronger than pluperfect in contexts like (76). By Gricean reasoning, then, one would infer that the present perfect is false in such contexts, and so the result state of the past event does *not* hold at the Utterance Time. In this

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[35] Such an ambiguity has even occasionally been proposed for English past perfectives, which have a wider distribution than past perfectives in other languages, and can be used in environments where other languages require use of the present perfect (Kratzer 1998).

way, we could understand how the pluperfect utterance in (76) would imply that the resulting state of the window's opening – *i.e.*, it being open – no longer holds, and so the window is closed.

In much the same way, we can also derive the 'cancelled result' implication in (1bii) as merely an instance of the 'cessation' implication in (1bi). To see this, let us first consider the truth-conditions predicted for a ('discontinuous') past perfect and for a NON-FUTURE perfect.

(82)   **PAST vs. NON-FUTURE With Perfects**

    a.   <u>'Discontinuous' Past Perfect</u>
        (i)   *LF Structure:* [$_{TP}$ [$_T$ PST]$_i$ [PERF [Dave leave]]]

        (ii)   *Predicted Truth-Conditions:*
            [[(82ai)]]^{w,t,g} is defined only if **$g(i) < t$**; if defined, is True *iff*

            $\exists$e. leave(e) &Agent(e) = Dave & T(e) < g(i) & g(i) $\subseteq$ T(RES(e))
            'The TT is in the result of an event of Dave leaving'

    b.   <u>Non-Future Perfect</u>
        (i)   *LF Structure:* [$_{TP}$ [$_T$ NFUT]$_i$ [PERF [Dave leave]]]

        (ii)   *Predicted Truth-Conditions:*
            [[(82ai)]]^{w,t,g} is defined only if **¬ ($t_0 < g(i)$)**; if defined, is True *iff*

            $\exists$e. leave(e) &Agent(e) = Dave & T(e) < g(i) & g(i) $\subseteq$ T(RES(e))
            'The TT is in the result of an event of Dave leaving'

Once again, the PST perfect in (82a) requires that the TT exclude the UT, while the NFUT perfect in (82b) allows the TT to contain the UT. Consequently, in a context where the UT is topical and salient, the principle in (72) will cause sentence (82a) to trigger the pragmatic reasoning in (75). If the speaker is also assumed to know whether or not both sentences in (82) are true, the reasoning in (75) would entail that the truth-conditions in (82b) – with g(i) containing the UT – do not hold. Since sentence (82a) was asserted, this would entail that the resulting state of the past event held at the past time *t'*, but does not extend into the UT. In this way, we can understand how (*e.g.*) sentence (5bii) could imply that the resulting state of the subject's having left – *i.e.*, their not being present – no longer holds at the Utterance Time, and so they have returned.

To summarize, in languages exhibiting the inferences in (1bii), so called 'perfective' aspect seems to be ambiguous, and allows for a reading as PERFECT aspect. If we adopt a 'result state' analysis PERFECT, then the 'cancelled result' implication (1bii) will follow as a subcase of the 'cessation' implication (1bi). Furthermore, we can predict similar 'cancelled result' uses of pluperfects in 'obligatory tense' languages such as English, where they are simply a subcase of (English-style) cessation implicatures.

Finally, let us consider the 'unexpected result' implication of (discontinuous) past perfectives. Interestingly, in all the attested examples of such 'unexpected result' uses, the unexpected result in question is explicitly mentioned in the surrounding discourse. Furthermore,

for precisely this reason, discontinuous past 'perfectives' in such cases can be rather naturally translated into English as pluperfects. The following English discourses illustrate.

(83)   'Unexpected Result' and the Pluperfect

      a.   I **had roasted** that for him, but he didn't want to eat it.   (*cf.* (3b))
      b.   I **had told you** "don't touch a knife", but you did anyway.   (*cf.* (15))
      c.   He didn't show up. But, he **had told** me that he would return.   (*cf.* (19))

Furthermore, citing earlier sources, Plungian & van der Auwera (2006: 335) again note that various authors have ascribed such 'unexpected result' uses to the pluperfect in various languages. There is again a striking parallel between the French data below and the 'discontinuous past perfect(ive)s in (15) and (19).

(84)   **'Unexpected Result' and the French Pluperfect**
On   te   l'**avait**   **dit**!
they   you   3sgO.**PST.PERF**   said
They had said it to you [≈ Didn't I warn you?]   (Plungian & van der Auwera 2006: 335)

Under our formal semantics for PERFECT (81), the appearance of PERF in (83)-(84) is quite understandable. In these cases, we can construe the Topic Time of the sentence as the time of the 'unexpected' consequence. Under the semantics in (81), PERF would locate that time within the resulting state of the described event; for example, the pluperfect in (83c) would place the time his not showing up within the result state of his having said he would return. The rhetorical effect of such an utterance, then, is to contrast the preceding event (*e.g.*, his having said that he would return) with the unexpected consequence (*e.g.*, his not actually returning).

      With all this in mind, a rather simple explanation of the 'unexpected result' implication in (1bii) obviously emerges. Given that morphological 'perfectives' allow for an interpretation as a perfect in these languages, sentences such as (3b), (15) and (19) may be no different in form or analysis from their English pluperfect translations in (83). That is, the 'unexpected result' implication in (1bii) is actually nothing more than a rather typical rhetorical usage of the pluperfect, whereby it positions some 'unexpected result' within the result state of some past event, the very same event that causes the former to be 'unexpected'. It is perhaps worth noting that this (synchronic) analysis of the 'unexpected result' implication mirrors the diachronic analysis of Russian *bylo* (7) put forth by Kagan (2011):

> "Etymologically, the *bylo* construction is derived from the Pluperfect aspect in Old Russian, which was used to report a past tense event which preceded another past tense event…. the reflex of its original meaning can still be perceived. Both the modern *bylo* construction and its Old Russian ancestor report an event that took place in w_0 before the speech time and was… followed by another past event…" [*i.e.*, in the case of modern *bylo*, the 'unexpected' consequence] (Kagan 2011: 75)

      In summary, we have seen that the 'unexpected / cancelled result' implications in (1bii) can both follow from the hypothesis that so-called 'perfective' aspect in many languages is actually ambiguous, and can be interpreted as an instance of PERFECT. Combined with a result-

state semantics for PERFECT (81), the 'cancelled result' implication follows as a subcase of the 'cessation' implication (1bi), while putative instances of the 'unexpected result' implication are, in actuality, simply instances of a fairly common rhetorical use of the pluperfect. Most importantly, however, our analyses of the implications in (1bii) again rest on the crucial assumption that so-called 'discontinuous past' is semantically nothing more than a simple, pure PAST tense.

7.   Conclusion

Thanks to the in-depth descriptive work of such scholars as Leer (1991) and Plungian & van der Auwera (2006), it appears that some languages possess a morpheme that combines the meaning of past tense (1a) with a variety of additional implications (1b). This raises the question of whether those languages possess a distinct tense category – beyond merely 'past', 'present' and 'future' – one that could be dubbed 'discontinuous past' (Plungian & van der Auwera 2006). This question itself, though, amounts to the question of whether the additional implications in (1b) are part of the *lexical semantics* of the morphemes in question, or whether they can be seen to follow via pragmatic inference from the past meaning in (1a). In this paper, we sought to address this latter question by careful exploration of the Tlingit 'decessive epimode', a morpheme with the characteristic properties of such 'discontinuous pasts'.

We found that in Tlingit, the inferences in (1b) cannot be cancelled in exactly the same manner by which superficially similar implicatures observed with English past tense may be cancelled. While this would at first glance support the view that those inferences are indeed semantic, we also saw that a variety of other facts point in the opposite direction. That is, contrary to prior formal analyses of such 'discontinuous past' morphemes (Copley 2005), the inferences in (1b) do seem to be cancellable in certain environments, and so cannot be part of the lexical semantics of the Tlingit morpheme. We also saw that some of the evidence for this can be found in other languages appearing to exhibit 'discontinuous past', which strongly suggests that in all such cases of 'discontinuous past', the special inferences in (1b) are (somehow) pragmatic.

One striking feature of these putative 'discontinuous pasts' is that they are all found in 'optional tense languages', languages where unmarked verbs can be used to describe either present or past eventualities. This again strongly suggests an analysis whereby the special inferences in (1b) are pragmatically derived from (i) the PAST meaning in (1a) and (ii) the fact that the PAST tense in question is 'optional'. We developed one such account, building upon prior semantic research into 'optional tense' languages (Matthewson 2006). The proposed account is able to derive the special inferences in (1b) via a pragmatic principle requiring that the Utterance Time be included within the Topic Time, whenever the grammar of the language and the context of utterance allow for it. Furthermore, our account correctly predicts crucial differences between the implications in (1b) and superficially similar implicatures in 'obligatory tense' languages like English, as well as the special circumstances where the implications in (1b) can be cancelled.

In summary then, we have found that there is no distinct category of 'discontinuous past'. Rather, morphemes that trigger the inferences in (1a,b) are simply instances of (optional) PAST tense. This result nicely aligns with emerging evidence that the only true 'tenses' across languages are (at most) PAST, PRESENT, FUTURE, and NON-FUTURE (Cable 2013).[36]

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[36] Note, however, that it is quite likely that of these four categories, only PAST is truly a 'tense' (in the sense commonly intended by semanticists). Sauerland (2002) argues that 'present' tense morphology is semantically vacuous. Many authors have argued that 'future' morphology is not properly speaking a 'tense', but instead is a

Of course, the analysis proposed here makes one rather obvious, untested prediction: in *all* 'optional tense' languages, PAST morphology should exhibit the special 'discontinuity' inferences in (1b). At present, however, it is certainly not the case that the special implications in (1b) are reported for all such 'optional tense' languages (Matthewson 2006). On the other hand, it was not until the in-depth descriptive studies of Leer (1991) and the scholars cited by Plungian & van der Auwera (2006) that those inferences were explicitly noted for the past tense morphemes discussed here. Furthermore, given the evidence presented in Section 5, the discovery of an 'optional past tense' for which the inferences in (1b) were utterly alien would not undermine the claim that those inferences are non-semantic (where they do occur), though it would throw into question the specific pragmatic account developed here. Either way, more detailed attention to cases of 'optional tense' – and the inferences they do (or do not) license – is crucial for our fuller understanding of cross-linguistic semantic variation.

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modal operator (Abusch 1997, Kratzer 1998, Matthewson 2006). Finally, Matthewson (2006) notes that the special presupposition of NON-FUTURE might actually just be an inherent property of the T-head, it being the case that T-heads in general cannot denote times that follow the local evaluation time (Abusch 1997). In the end, then, it may be that there is only one 'true' tense (i.e., presuppositional feature of the T-head): PAST.

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