Inchoativity meets the Perfect Time Span: The Niuean perfect

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Abstract

This paper presents a semantic analysis of the perfect aspect in Niuean (Polynesian). We argue based on novel data that the Niuean perfect shares many properties with the English perfect, but also several striking differences. The Niuean perfect disallows universal perfect readings, can induce inchoative readings, and with some event-types allows present in-progress readings.

We analyse the Niuean perfect as introducing inchoative semantics: it adds an initial change-of-state to the predicate to which it attaches, and places that change-of-state inside the Perfect Time Span. Our findings cast doubt on a model of grammar whereby lexical aspectual operations such as inchoativization are strictly separated from viewpoint aspectual operations such as the perfect. We argue for a flexible approach whereby different components of meaning (inchoativity, a Perfect Time Span restriction, current relevance effects) can be introduced at different levels and combined in different ways by languages to produce surface cross-linguistic variation.

1 Introduction

This paper presents a semantic analysis of the perfect aspect in Niuean (Polynesian). Previous research has identified two elements which separately or together mark the perfect in this language: a pre-verbal particle *kua,* and a post-verbal particle *tuai* or *tei* (Seiter 1980, Massam 2009, [names deleted for review] 2012). However, the semantics of the perfect has not been fully investigated in prior research.

We will show that the Niuean perfect is partially similar to an English perfect, in that it conveys several of the expected readings (experiential, resultative), it induces current relevance effects, and it is dispreferred with certain past adverbials. However, we will also show that the Niuean perfect diverges from the English one in significant ways. First, the Niuean perfect disallows universal perfect readings. Second, as also noted by Bauer (1997) for Māori and by Koontz-Garboden (2007) for Tongan, the Niuean perfect can induce inchoative readings; and third, with some event-types it allows present in-progress readings.

We present an analysis of the Niuean perfect whereby it introduces inchoative semantics: it adds an initial change-of-state to the predicate to which it attaches, and places that change-of-state inside the Perfect Time Span (Iatridou et al. 2001). These findings have implications for a model of grammar whereby lexical aspectual operations such as inchoativization are strictly separated from viewpoint aspectual operations such as the perfect (Koontz-Garboden 2007:123 and references cited therein). We argue for a more flexible approach whereby different components of meaning (inchoativity, a Perfect Time Span restriction, current relevance effects) can be introduced at different levels and combined in different ways by languages to produce surface cross-linguistic variation.

The paper is structured as follows. The remainder of the introduction outlines background about Niuean and our methodology. In section 2 we summarize previous research on the Niuean perfect. Section 3 reviews core empirical properties of the English perfect, to serve as a basis for comparison with Niuean. In section 4 we present the Niuean data and generalizations, and in section 5 we present our analysis. Section 6 is devoted to cross-linguistic comparison; we

identify similar phenomena in Māori (Bauer 1997, Herd 2005, Harlow 2007), Tongan (Koontz-Garboden 2007), St'át'imcets (Davis 2012), and Saisiyat (Guekguezian 2013a,b). Section 7 concludes the paper.

1.1 Language background and methodology

Niuean is a Polynesian language of the Tongic subgroup, spoken in Niue and by Niueans in diaspora, the latter located primarily in New Zealand. As detailed by Sperlich (2005), it is an endangered language, with a small and decreasing number of children who are speakers.

The generalizations advanced in this paper are based primarily on original fieldwork with the third author, who is a native speaker of Niuean from the village of Lakepa. All unreferenced data in the paper represent the third author's judgments. Fieldwork methodologies used include translation tasks (from English to Niuean and vice versa), grammaticality judgment tasks, acceptability judgment tasks (in which the speaker judges the acceptability of a Niuean utterance in a particular discourse context), storyboard tasks (in which the speaker tells a story in her own words based on a series of pictures which are designed to elicit particular structures), and collection of the third author's spontaneously-offered data and comments about the meaning of sentences containing the perfect aspect. See Matthewson (2004) and Burton and Matthewson (2015) for further details of fieldwork methodology. Additional data were gathered from published sources, such as Seiter (1980), Sperlich (1997) and works by Diane Massam and colleagues (e.g., Massam et al. 2006, Massam 2009). Interestingly, data from Seiter (1980) do not always match our third author's judgments. This may be due to language change in the intervening decades, or to dialect differences.

Niuean is a VSO language, with TAM (tense, aspect, mood) marking appearing clause-initially. Simple past, present and future-interpreted sentences are illustrated in (1)-(3).[1] Present tense is unmarked, as shown in (2).[2]

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[1] Data are presented in the Niuean orthography. *g* is a velar nasal, and *t* is pronounced [s] before front vowels (Seiter 1980:x). There is inter-speaker variation in vowel length; some vowels in our data have different lengths from those found in other sources. Data from other sources are presented in their original form, but we have modified labels used in glosses for consistency with our own glossing, except where the original gloss is relevant to a point we make in the discussion. Niuean case markers take different forms depending on whether they appear before a common noun (ABS = *e*; ERG = *he*) or a proper noun/pronoun (ABS = *a*; ERG = *e*). In the existing literature, this distinction between common and proper case markers/articles is sometimes highlighted with additional annotations in the glosses (cf. Massam et al. 2006). However, since the common/proper distinction is not the focus of this paper, we simply give the case in the gloss. Abbreviations not covered by the Leipzig Glossing Rules: C = common; DIR1 = toward speaker; DIR2 = toward hearer; HAB: habitual; IAM: iamitive; INTENS: intensifier; NFUT: non-future; PRO: pronominal; PRP: proper; YNQ: yes-no question.

[2] Seiter (1980:5) argues that *ko e* is the 'actual present' marker, giving examples as in (i).

(i) **Ko e** tohitohi a au mogonei aki e pene fou
PRES write ABS 1SG now with ABS pen new
'I'm writing at the moment with a new pen.' (Seiter 1980:5)

However, Massam et al. (2006) show that *ko e* can be used to talk about past events, as in (ii).

(ii) *Context: What did you do yesterday?*

(1) **Ne** hau a Tom i ne afi.
PST come ABS Tom on PST day
'Tom arrived yesterday.'

(2) Nofo a Maka he laulau.
sit ABS Maka LOC table
'Maka's sitting on the table.' (Seiter 1980:3)

(3) **To** ita e taokete haau.
FUT angry ABS brother 2SG.POSS
'Your big brother will be angry.' (Seiter 1980:6)

Overt past and future tense marking is optional (Seiter 1980, Massam 2009:11). This is illustrated in (4A) for past interpretations, and in (5) for future.

(4) Q: Ko e hā ne mata ita a koe?
KO ABS REASON/WHY/WHAT NFUT look angry ABS 2SG
'Why are you looking angry?'

A: Faka-ma-lipi e Tom e hio haaku.
CAUS-RES-break ERG Tom ABS window/glass 1SG.POSS
'Tom broke my window.'

(5) Kai a tautolu he puaka he pō nei.
eat ABS 1PL.INCL LOC pork LOC night this
'We're going to eat pork tonight.' (Seiter 1980:3)

2 Prior research on the Niuean perfect

According to Seiter (1980:7-8), the Niuean perfect is marked either by a clause-initial TAM marker *kua,* by a post-verbal particle *tuai,* or by *kua* and *tuai* together. These basic distributional claims are illustrated in (6)-(8).

Ko **e** ta kilikiki a maua
Ko C play cricket ABS 1DU.EXCL
'We played cricket.' (Massam et al. 2006, citing Kaulima and Beaumont 2002:42)

Massam et al. analyze *ko* syntactically as a preposition, and state that when preceding a verb it 'presumably provides some sort of tense or aspectual meaning to the clause, with a possible focus component as well (2006:14).' They also note that the use of the (absolutive) common article *e* after *ko* in examples like (ii) may signal 'that the verb in the construction is a zero derived nominal participle' (2006:13). This idea is supported by Seiter's (1980:118) discussion of nominalizations introduced by the absolutive case marker *e*. We set further specification of the semantics of *ko e* aside for future research and will gloss it as 'KO ABS' throughout this paper.

(6) **Kua** oti lā ia e vahega.
PRF finish just DEM[3] ABS class
'The class has/is just finished.'

(7) Hau **tuai** e tehina haau.
come **PRF** ABS brother 2SG.POSS
'Your little brother has come.' (Seiter 1980:8)

(8) **Kua** uku hifo foki **tuai** a au ke he toka.
PRF dive down also **PRF** ABS 1SG to LOC bottom
'I have dove down to the bottom before.' (Seiter 1980:24)

However, Seiter also notes (1980:8) that it is 'remarkable' that *tuai* would mark a perfect, 'since all other tense/aspect markers in Niuean are clause-initial.' Furthermore, Sperlich (1997:328) comments that *tuai* implicitly conveys 'the notion that an action or event was 'completed before the expected time frame,' and that it is 'best glossed with 'already' or 'early'.' Two of Sperlich's examples illustrating this are given in (9)-(10), and one from our own data is given in (11). Our third author also spontaneously observes that (7) can be translated as 'Your little brother came early.'

(9) Kua fano **tuai** a ia.
PRF go **tuai** ABS 3SG
'He has (already) gone.' (Sperlich 1997:328; morpheme glosses added)

(10) To fano **tuai** au.
FUT go **tuai** 1SG
'I will have gone (already, early).' (Sperlich 1997:329; morpheme glosses added)

(11) Na palana **tuai** nī au ke lagomatai a koe.
PST plan **tuai** EMPH 1SG COMP help ABS 2SG
'I'd already planned to help you.' (speaker's volunteered translation)

As discussed by Vander Klok and Matthewson (2015), there is substantial overlap between the semantics of the perfect aspect and of elements denoting 'already', and it can be difficult to tease the two apart without detailed semantic testing. In this paper, we assume that *kua* alone represents the perfect aspect in Niuean. This assumption is supported by the fact that the Pollex Online database (http://pollex.org.nz, Greenhill and Clark 2011) reconstructs only **kua* as the Proto-Polynesian perfect, and lists cognate reflexes of *kua* for the perfect in 23 Polynesian languages (http://pollex.org.nz/entry/kua.1/). It is also supported by some of our own data showing subtle semantic distinctions between *kua* and *tuai,* which we point out where relevant below. Our current preliminary analysis of the postverbal element is that it encodes recency, and we gloss it accordingly, awaiting further research dedicated to the question. One final thing to

[3] Sperlich (1997:169) points out that *ia* is required after *lā* 'in positive, past or present sentences'. Since it seems most likely that *ia* has a demonstrative function in this context (cf. Sperlich 1997:130), we have glossed it as DEM here.

note before proceeding is that in the speech of our third author, instances of postverbal *tuai* tend to be pronounced as *tei* [tei], with a phonologically unusual [t] before a front vowel (see footnote 1). See the Appendix for discussion of the *tuai / tei* connection.

The syntax of the Niuean perfect has been investigated by Massam (2009), as part of her examination of the TAM system of the language. Massam argues that *kua (tuai)* is merged as the head of an Aspect Phrase, which is situated above NegP and below the position to which Tense markers raise. As our focus in the current paper is the semantics, we set syntactic details aside here. All that is important for our discussion is that the perfect is able to compose with the main predicate, a criterion which is satisfied by Massam's proposal.

Given that overt tense marking is optional in Niuean, we expect that the perfect might have past perfect and future perfect interpretations, even in the absence of tense marking. Seiter states (1980:9) that this is the case, and that this is almost the only way to express such meanings, since the only tense marker that can co-occur with *kua* is the rare past marker *na* (glossed by Massam 2009 as 'past uncertain/ongoing truth').[4] Examples of past perfect uses of *kua* are given in (12)-(15).

(12) **Kua** homo e fakafetuiaga ha taua.
PRF excel ABS friendship POSS 1DU.INCL
'Our friendship had been the greatest.' (Seiter 1980:9)

(13) He mogo ne hoko mai au, **kua** fitā he kai
LOC time PST arrive DIR1 1SG **PRF** be.already.done COMP eat
he tau faoa e tau kai ne fiafia au ki ai
ERG PL people ABS PL food PST like 1SG to PRO
'When I arrived, the people had already eaten the food I like.'

(14) *Context: You are a history teacher talking about the 16th century.*
He mogo/magahala ia, **kua** fitā he hoko a
LOC time/part.path that **PRF** be.already.done COMP arrive ABS
Columbus ki Amelika
Columbus to America
'At that time, Columbus had already reached America.'

(15) **Kua** fitā he fano a Tom he mogo ne
PRF be.already.done LOC leave ABS Tom COMP time PST
hoko au ke he fale haana
arrive 1SG to LOC house 1SG.POSS
'When I got to Tom's house, he had already left.'

A future perfect interpretation of *kua ... tuai* is shown in (16). Future perfect interpretations are not possible in the speech of our third author, for whom (16) and (17) are both unacceptable.

(16) Ka liu mai a koe, **kua** momohe **tuai** a mautolu

[4] See Massam (2009) for analysis of the co-occurrence restrictions between different TAM markers in Niuean.

when return DIR1 ABS 2SG **PRF** sleep.PL **PRF** ABS 1PL.EXCL
'When you return, we shall have gone to sleep.' (Seiter 1980:8 / McEwen 1970:48)

(17) *Context: Tom has a crush on your sister. He tells you that he will be coming over at 6pm to visit her. But you know that she leaves at 5pm for her waitressing job. You tell him, "If you come at 6, she will have already left."*

?? Ka hau a koe he hola ono, **kua** fitā he fano
if come.DIR1 ABS 2SG LOC hour six **PRF** be.already.done LOC go
a ia.
ABS 3SG
Comment: 'It doesn't sound right. I'd use it if someone came looking for Tom and my sister had already left.'

In the remainder of this paper, we concentrate on present perfect interpretations of the *kua* construction, setting the other possible interpretations aside for future research.

In addition to the prototypical present perfect uses illustrated so far, *kua* allows a more surprising present state reading, as shown in (18). The interpretation of this sentence is different from that of an English present perfect of a stative (e.g., 'Pita has been angry at me.').[5]

(18) **Kua** ita mai a Pita ki a au.
PRF angry DIR1 ABS Pita to ABS 1SG
'Pita's angry at me.' (Seiter 1980:18)

Seiter characterizes this as an extension of the perfect meaning, with 'the state being viewed as the ongoing effect of some completed event' (1980:8). He also claims (1980:8; see also Massam 2009:6) that *kua* is used only with states which are potentially transitory, not inherent. Seiter thus states that *kua* cannot be used in a sentence like (19).

(19) Tokoluga lahi e mata feutu.
high greatly ABS edge cliff
'The top of the cliff is very high.' (Seiter 1980:8, cited by Massam 2009:6)

Below, we argue against this generalization, although we show that it contains an important kernel of truth.

Another non-prototypical perfect usage is illustrated in (20); Seiter observes (1980:9, following McEwen 1970) that in past narratives, *kua* may freely alternate with past marking.

(20) **Kua** pehe atu a peka, "Fakaalofa atu ma kuma".
PRF say DIR2 ABS flying.fox love DIR2 VOC rat

[5] Our third author accepts sentence (18) (either with or without the directional *mai*), but would also often express this meaning without *kua,* as in (i).

(i) Ita a Pita ki a au.
angry ABS Pita to ABS 1SG
'Pita's angry at me.'

'Flying Fox said, "Greetings, Rat".' (Seiter 1980:9)

This concludes the summary of prior discussion of the Niuean perfect. There has also been discussion of cognate perfect morphemes in related languages, in particular by Bauer (1997) and Herd (2005) on Māori (Eastern Polynesian), and by Koontz-Garboden (2007) on Tongan (Tongic). We will discuss the Māori cognate *kua* and Tongan cognate *kuo* in section 6.

3 The present perfect

According to Bybee et al. (1994:61), the goal of a perfect (or 'anterior') 'is not to locate a situation at some definite point in the past, but only to offer it as relevant to the current moment.' Similarly, Dahl and Velupillai (2011) define the perfect as a category 'which is used to express events that took place before the temporal reference point but which have an effect on or are in some way still relevant at that point.' In this section, we will start by reviewing a core set of well-known properties of the English perfect. These will serve as a starting point for empirical comparison when we turn to Niuean.

First, present perfects have an *experiential reading,* which asserts that an event has happened at any time in the past. This is illustrated in (21).

(21) Q: Have you ever climbed a mountain?
A: Yes, I've climbed a mountain.

Second, perfects of statives or progressives have a *universal perfect* reading, in which the relevant event or state is still ongoing at the reference time:

(22) a. Tom has been sick since December.
b. Mary has been singing that song since this morning.

Third, present perfects have a *result state* reading, in which there is an implication that the result state of a prior event holds at the reference time (in this case, the utterance time). The result state reading obtains in English only for telic predicates (Kiparsky 2002, Deo 2006, Koontz-Garboden 2007, among others).

(23) a. John bought a new car, but he sold it.
b. # John has bought a new car, but he sold it. (adapted from Lin 2003:279)

Specific past-time adverbials are disallowed with English present perfects, as shown in (24)a (this is Klein's 'Present Perfect Puzzle').[6] *Since*-adverbials are fine, as in (24)b.

(24) a. # Tom has gone to Hawaii *yesterday / two weeks ago / last year.*
b. Tom has gone to Hawaii *since he moved to New Zealand.*

[6] This property is not shared by all languages; see Giorgi and Pianesi (1997), Chung (2012), among others.

The present perfect also displays distinctive pragmatic effects. These have been characterized as 'current relevance', 'lifetime', 'repeatability' or 'current possibility' effects (see McCawley 1971, Inoue 1979, Katz 2003, Portner 2003, among many others, for discussion). These pragmatic effects are exemplified by the unacceptability of the data in (25), and the contrast in (26).

(25) a. # Gutenberg has discovered the art of printing. (McCoard 1978)
b. # Einstein has visited Princeton. (Chomsky 1970)

(26) *Context: You are teaching a history lesson. You tell the kids:*
a. Columbus discovered America / Hitler killed himself.
b. # Columbus has discovered America / Hitler has killed himself.

A case showing non-lifetime 'current possibility' effects is given in (27). According to Katz (2003), this example is unacceptable because the present perfect presupposes that it is possible for the described event to occur at a time after the utterance time (cf. McCawley 1971, Inoue 1979, among others).

(27) *Context: The speaker's mother is past child-bearing age.*
* My mother has given birth to two children. (Katz 2003; Katz's judgment)

However, in our judgment and the judgment of native speakers we have consulted, (27) is at worst marginal, and may be acceptable in certain discourse contexts.[7] The precise pragmatic properties of the perfect are tricky to pin down empirically (and a challenge to derive analytically). Nevertheless, there is a clear intuition that the event described must satisfy some sort of current relevance/lifetime/repeatability requirement.

The final property to note is something which may seem obvious in the context of English, but which will become highly relevant when we look at Niuean. This is that all lexical aspectual classes give rise to the same temporal configurations with the present perfect. Apart from the universal perfect reading (which as we saw is possible only with statives or progressives), all lexical aspectual classes give rise strictly to anteriority interpretations. This is illustrated in (28), where in all cases, the eventuality precedes the utterance time.

(28) a. *State:*
Tom has been angry.

b. *Activity:*
Tim has danced.

c. *Accomplishment:*
Tina has built a house.

d. *Achievement:*
Toby has reached the top.

[7] A reviewer notes that s/he finds (27) perfectly acceptable with an experiential reading.

These properties of the English perfect, which we will test on Niuean in the following section, are summarized in Table 1.

Table 1: Properties of the English perfect

experiential reading	✓
universal perfect reading	✓
result state reading	✓
adverbial restrictions	✓
lifetime effects / future possibility	✓
temporal reading of states	anteriority
temporal reading of activities	anteriority
temporal reading of accomplishments	anteriority
temporal reading of achievements	anteriority

In terms of analysis, there is currently no consensus about how to derive the present perfect's complex set of semantic and pragmatic properties. Many differing analyses are available; see McCawley (1971), Comrie (1976), Bennett and Partee (1978), McCoard (1978), Dowty (1979), Inoue (1979), Moens (1987), Mittwoch (1988), Moens and Steedman (1988), Parsons (1990), Klein (1992), Kamp and Reyle (1993), Vlach (1993), Spejewski (1996), Michaelis (1998), Iatridou et al. (2001), Kiparsky (2002), Katz (2003), Pancheva (2003), Portner (2003), Pancheva and von Stechow (2004), Demirdache and Uribe-Etxebarria (2005), Deo (2006), Schaden (2009), Chung (2012), among many others. It is not our goal here to decide between the various competing approaches. Instead, our goals are to establish that the semantics of the Niuean perfect differs substantively from that of English or other well-studied languages, and to examine the consequences of the Niuean data for a theory of how perfects vary cross-linguistically. In section 5, we will adopt in broad outline one common approach to the perfect – an Extended Now, or Perfect Time Span, analysis (McCoard 1978, Iatridou et al. 2001, among others). But first, we proceed to test each of the properties listed above in Niuean.

4 Properties of the Niuean perfect

In this section we present the results of our empirical investigation of the Niuean perfect *kua.* For the reasons mentioned above, we will mostly set aside the second particle that Seiter analyzes as conveying the perfect, *tuai/tei.* We will however point out the instances where we have identified a semantic difference between *kua* and *tuai/tei*.

4.1 Experiential readings

The Niuean perfect allows experiential readings; this is shown in (29)-(31).

(29) (Ko e) mena **kua** mohe nakai a koe he kelekele?
KO ABS thing **PRF** sleep Q ABS 2SG LOC ground
'Have you ever in fact slept on the ground?' (Seiter 1980:128)

(30) A: **Kua** toli mouga nakai a koe?
PRF climb mountain YNQ ABS 2SG
'Have you ever climbed a mountain?'

B: E, **kua** toli mouga (tei) au
yes **PRF** climb mountain (recent) 1SG
'Yes, I've climbed a mountain.'

(31) A: **Kua** hī nakaia koe tali mai he moui a koe?
PRF catch.fish Q ABS 2SG since DIR1 LOC live ABS 2SG
'Have you fished since you were born/since you've become alive?'

B: **Kua** hī tei au
PRF catch.fish recent 1SG
'I have fished.'

Just as in English, non-experiential readings are available for similar or identical sentences. For example, without the *tali mai he moui a koe* 'since you were born', (31A) can be a question about whether B has fished yet on a particular day. (31B) is similarly ambiguous between an experiential 'ever' reading, and being about a particular occasion.[8]

4.2 No universal perfect readings

A striking feature of the Niuean perfect, which to our knowledge has not previously been noticed in print, is that there is an absence of universal perfect readings. As shown in (32)-(34), the relevant interpretation whereby the action or state has been ongoing since a past time, and is still ongoing at the utterance time, must be rendered using a plain predicate, or the *ko e* construction (characterized by Seiter (1980:5-6) as an 'actual present', conveying an event ongoing at utterance time, but see footnote 2 above).[9]

(32) *Context: You're getting a bit annoyed about how long Mary has been singing this one song. You say 'Mary has been singing that song since this morning.'*
a. ?? **Kua** lologo (tei) a Malia e lologo na tali mai he mogo pogipogi

[8] (31B) also has a present in-progress reading, which we discuss in section 4.8.1.

[9] According to an anonymous reviewer, French also disallows the present perfect in universal-perfect contexts, and uses the present tense instead; s/he provides the data in (i). This intriguing parallel between Niuean and French requires further research.

(i) a. Il est malade depuis lundi.
he is sick since Monday
'He has been sick since Monday.'

b. * Il a été malade depuis lundi.
he has been sick since Monday
'He has been sick since Monday.'

PRF sing (recent) ABS Mary ABS song DEM since DIR1 LOC time morning
'Mary has been singing that song since this morning.'

b. **(Ko e)** lologo a Malia e lologo na tali mai he mogo pogipogi
(KO ABS) sing ABS Mary ABS song DEM since DIR1 LOC time morning
'Mary is singing that song since this morning.'

(33) a. Gagao a ia tali mai he aho Gofua.
sick ABS 3SG since DIR1 LOC day Monday
'He has been sick since Monday'

b. **Kua** gagao a ia tali mai he aho Gofua.
PRF sick ABS 3SG since DIR1 LOC day Monday
'He has been sick since Monday.'

a. *Monday Tuesday Wednesday*
John sick---------->

Our third author judges that (33)b is not compatible with the universal perfect context schematized in (33)c. To convey such a meaning, (33)a must be used instead.

(34) *Context: I see your long hair and ask you how long it's been like that.*
a. ?? **Kua** loa (tei) e ulu haaku tali mai he tau 1980
PRF long recent ABS hair 1SG.POSS since DIR1 LOC year 1980
'My hair has been long since 1980.'

b. Loa e ulu haaku tali mai he tau 1980
long ABS hair 1SG.POSS since DIR1 LOC year 1980
'My hair has been long since 1980.'

For (34)a, our third author comments that *kua* could in fact work, because hair is growing all the time; even when you keep it at the same length, it's always growing and you trim it and it still grows. This comment indicates that (34)a with *kua* can only be interpreted as inchoative, not as a universal perfect (thus, it can only mean 'My hair has been getting long(er) since 1980').

4.3 (Non-)occurrence with past-time adverbials

The restriction against specific past-time adverbials observed with the English present perfect holds weakly in Niuean. The examples in (35)-(38) receive varying judgments by our third author, but they are consistently judged as less optimal or preferred than versions which either (i) lack any TAM marking at all; (ii) lack *kua* and have the past tense marker *ne* instead; or (iii) have *kua* plus the 'past uncertain' marker *na*.[10]

[10] The judgments sometimes vary for a single sentence; this is the case, for example, with (35) and (36), which were rejected on some elicitation occasions and accepted on others. In general, there is a tendency for *kua* to be dispreferred if the event time is far in the past. Thus, *kua* is often

(35) ? **Kua** hau a Tom *i* *ne* *afi.*
PRF come ABS Tom *on* *PST* *day*
'Tom has arrived yesterday.'

(36) ?? **Kua** fano a Tom ki Hawaii *he* *tau* *kua* *mole.*
PRF go ABS Tom to Hawaii *LOC* *year* *PRF* *pass*
'Tom has gone to Hawaii last year.'

(37) ?? **Kua** fano a Tom ki Hawaii *he* *ua* *e* *tau* *ki* *tua.*
PRF go ABS Tom to Hawaii *LOC* *two* *of* *year* *to* *back*
'Tom has gone to Hawaii two years ago.'

(38) ?? **Kua** hau e tehina haau *i* *nī nei.*
PRF come ABS younger.sibling 2SG.POSS *on* *earlier.on*
'Your younger sibling has come earlier.'

Some of the preferred alternatives are illustrated in (39)-(41).

(39) Hau a Tom *i* *ne* *afi.*
come ABS Tom *on* *PST* *day*
'Tom arrived yesterday.'

(40) (**Ne**) fano a Tom ki Hawaii *he* *tau* *kua* *mole.*
(**PST**) go ABS Tom to Hawaii *LOC* *year* *PRF* *pass*
'Tom went to Hawaii last year.'

(41) **Na** **kua** fano tei a Tom ki Hawaii *he* *tau* *kua* *mole.*
PST **PRF** go recent ABS Tom to Hawaii *LOC* *year* *PRF* *pass*
'Tom went to Hawaii last year.'

Although Seiter (1980) does not discuss the adverbial issue, his work contains at least one example suggesting that *kua* is good with specific past-time adverbials. Note that the event time in (42) is not very far in the past:

(42) **Kua** tu mai tuai e tagaloa he pogipogi nei
PRF stand DIR1 recent ABS rainbow LOC morning this
'There was a rainbow this morning.' (Seiter 1980:18)

In contrast with specific past-time adverbials, which lead to lowered acceptability with *kua*, non-specific adverbials are consistently fine with the perfect, just like they are in English.[11]

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judged as worse with 'two years ago' than with 'yesterday'. All *kua* sentences with specific time adverbials contrast with *kua*-less versions, in that the *kua* sentences are all judged as degraded at least some of the time.

[11] (43) and (45) are rejected with the 'recent' marker *tei*.

(43) **Kua** fano a Tom ki Hawaii tali mai he hau a ia ki Niu Silani
PRF go ABS Tom to Hawaii since DIR1 LOC come ABS 3SG to New Zealand
'Tom has been to Hawaii since he moved to New Zealand.'

(44) **Kua** fano tumau tei a Tom ki Hawaii.
PRF go regularly recent ABS Tom to Hawaii
'Tom has been to Hawaii a lot.'

(45) **Kua** gahua nakai a Mary tali mai he fanau?
PRF work YNQ ABS Mary since DIR1 COMP give.birth
'Has Mary worked since she had her baby?'

4.4 Result state holds at utterance time

We saw in English that with a telic predicate, the result state of the event is taken to hold at the utterance time with a present perfect. The same is true in Niuean, as shown in (46)-(50).

(46) *Context: Your cousin comes back to town after a trip away and you are catching her up on what has happened in the family while she was gone. One thing that happened was that your other cousin Sione bought a car but then sold it almost immediately. You say:*
* **Kua** fakatau (tei) e Sione e motokā foou ti sela e ia.
PRF buy (recent) ERG Sione ABS car new then sell ERG 3SG
'Sione has bought a new car and sold it.'

(47) *Context: Telling your friend why you were late. You say 'I lost my keys, but I found them.'*
a. * **Kua** galo (tei) e tau kī haaku, ka kua moua tei.
PRF lose (recent) ABS PL key 1SG.POSS but PRF find recent
'I have lost my keys, but I found them.'

b. (**Na**) galo e tau kī haaku, ka kua moua tei.
(PST) lose ABS PL key 1SG.POSS but PRF find recent
'I lost my keys, but I found them.'

In (48)a, the perfect marking leads the hearer to expect that the little brother is still there. If the brother came and went while the husband was out, the non-perfect version in (48)b is more appropriate.[12]

(48) a. *Context: I see a man coming up the front driveway and I call out to my husband who's inside the house:*
Kua hau (tei) e tehina haau!
PRF come (recent) ABS younger.sibling 2SG.POSS

[12] Bauer (1997:87-88) similarly notes for Māori that if one says 'The visitors have arrived' using *kua,* it implies you should get ready to welcome them.

‘Your little brother has come!’

b. Hau e tehina haau i nī nei
come ABS younger.sibling 2SG.POSS on earlier.on
‘Your little brother came earlier.’

Similarly, (49) with perfect marking is only acceptable if the speaker is ready at the utterance time; this cannot be a report about having been ready earlier.

(49) **Kua** mau (tei) au ke fano ke hī ika
PRF ready (recent) 1SG COMP go COMP catch.fish fish
‘I’m ready to go fishing.’

Finally, a hearer of (49B) would understand that the speaker still has lice at the utterance time.

(50) A: Malolo nakai a koe?
strong YNQ ABS 2SG
‘How are you?’

B: **Kua** kutu tei e ulu haaku.
PRF lice recent ABS hair 1SG.POSS
‘I’ve got lice.’

In order to express ‘I had lice, but I’ve got rid of them’, (51)a,b are offered, using past-tense *na,* and *kua* is rejected in place of *na*.

(51) a. **Na** kutu e ulu haaku, ka kua ai tei fai (he mogo nei)
PST lice ABS hair 1SG.POSS but PRF NEG recent have (LOC time this)
‘I had lice, but I don’t have any (now).’

b. **Na** kutu e ulu haaku, ka kua tului tei
PST lice ABS hair 1SG.POSS but PRF treat recent
‘I had lice, but it’s been treated.’

4.5 Present relevance

As briefly suggested by Seiter (1980:7), the Niuean perfect has present relevance effects. These are illustrated in (52)-(54). (52)a is a current relevance situation; the perfect is offered and the past tense *ne* is rejected. In (52)b, the opposite is true.

(52) a. *Context: Breaking up with someone.*
Kua oti tei e kapitiga ha taua
PRF finish recent ABS friend POSS 1DU.INCL
‘Our relationship is/has finished!’

b. *Context: Telling a story about the past.*

Ne oti e kapitiga ha taua ti fano au ki Sydney
PST finish ABS friend POSS 1DU.INCL so go 1SG to Sydney
'Our relationship ended and I went to Sydney.'

In line with this, the Niuean perfect also has lifetime effects; these have not been pointed out in prior literature.

(53) *Context: You are teaching a history lesson. You tell the kids:*

a. **Ne** kitia mua e Columbus a Amelika
PST first sight ERG Columbus ABS America
'Columbus discovered America.'

b. # **Kua** kitia mua e Columbus a Amelika
PRF first sight ERG Columbus ABS America
'Columbus has discovered America.'

(54)b is not acceptable in the history teacher context, but is acceptable if one is watching a movie and explaining what has just happened in the movie.[13]

(54) *Context: You are teaching a history lesson. You tell the kids:*

a. **Ne** taupega e Hitilā a ia nī
PST hang ERG Hitler ABS 3SG EMPH
'Hitler killed himself.'

b. # **Kua** taupega e Hitilā a ia nī
PRF hang ERG Hitler ABS 3SG EMPH
'Hitler killed himself.'

(55) is a non-lifetime case where there is no future possibility that the event will take place, and *kua* is disallowed.

(55) *Context: Krakatau is a volcano which erupted once in 1800, and then died. It's completely extinct, it can't erupt again. Someone is wondering why the land looks like it does around the nearby area. You say:*

(***Kua**) pa e mouga afi ko Krakatau ati pehe ai e tau vala
(***PRF**) explode ABS volcano KO Krakatau and.then be.like here ABS PL piece
kelekele he matakavi ē
ground/land LOC place this
'Krakatau (has) erupted (that's what caused the land formations around here).'
(adapted from Vander Klok and Matthewson 2015:194)

[13] The lifetime cases are all also rejected with 'recent' *tei* (either in combination with *kua* or alone), and our third author comments that the events are 'too far in the past' for *tei.*

The mother-giving-birth case ((27) above) is preferentially given with a past tense, as in (56)a-b, but is acceptable with a perfect, as in (56)c. This may match the marginal status of this judgment in English; as noted above, rejection of this case is not strong for many speakers.[14]

(56) *Context: Your mother is 75 years old (therefore not able to have any more children). You say:*

a. **Ne** fanau he matua fifine haaku tolu e fānau/tama
NFUT give.birth ERG parent female 1SG.POSS three ABS children/child
'My mother gave birth to three children.'

b. Tolu e fānau/tama **ne** fanau he matua fifine haaku
three ABS children/child **NFUT** give.birth ERG parent female 1SG.POSS
'My mother gave birth to three children.'

c. **Kua** fanau he matua fifine haaku tolu nī e fānau/tama
PRF give.birth ERG parent female 1SG.POSS three EMPH ABS children/child
'My mother has only given birth to three children.'

So far we have seen that the Niuean perfect shares almost all the properties of the English perfect: it has experiential readings, it has (weak) adverbial restrictions, it requires a result state to hold at the utterance time, and it has current relevance effects. The one difference is the striking absence in Niuean of universal perfect readings. In the next three sub-sections we see some more striking differences, when we turn to the temporal readings allowed for the different aspectual classes.

4.6 Stage-level states: Present state readings

As noted in section 2, Seiter observes that *kua* allows present-state readings with stage-level stative predicates (those denoting transitory or non-permanent states). Further examples are given in (57)-(62).[15]

(57) **Kua** malona e gutuhala
PRF broken ABS door
'The door is broken.'

(58) **Kua** galo e talo
PRF lose ABS taro
'The taro is lost.'

(59) **Kua** lolelole (tei) a Tom
PRF tired (recent) ABS Tom
'Tom is tired.'

[14] Interestingly, however, our third author still rejects *tei* in (56)b.

[15] *Kua* added to statives can also result in an inchoative reading. See below for discussion.

(60) **Kua** ita (tei) a Malia
PRF angry (recent) ABS Mary
'Mary is angry.'

(61) **Kua** meo tei a ia i mua he tau tagata
PRF bashfulrecent ABS 3SG at front POSS PL person
'He is bashful/embarrassed in front of the audience.'
Comment: 'It's happening right now.' (adapted from Sperlich 1997:222)

(62) **Kua** mafanafana mai e aho nei
PRF warm.INTENS here ABS day this
Today is warmer.' (Haji-Abdolhosseini et al. 2002:486; morpheme glosses added)

Seiter expresses the intuition that in these cases, 'the state [is] viewed as the ongoing effect of some completed event' (1980:8). This idea is supported by data such as (63), where the predicate is eventive and the perfect gives a result state reading.[16]

(63) **Kua** moho tei e talo
PRF cook recent ABS taro
'The taro is cooked.'

Similar readings arise with the Māori perfect marker *kua* when it applies to stative predicates (Bauer 1997:128). Bauer (1997) characterizes *kua* in these cases as marking inchoative/ingressive aspect (see section 6.1.1 for Māori data and discussion). According to this idea, a sentence like (60) would be more accurately and literally translated as 'Mary has become angry.' Our third author agrees with, and sometimes spontaneously produces, translations of this type, as shown in (64)-(67). Seiter's grammar also contains an example of an inchoative translation when *kua* applies to a stative, as in (68).

(64) **Kua** galo e talo he nakai leveki e mautolu.

[16] Dhillon et al. (2009) discuss the Niuean prefix *ma-,* whose function they hypothesize 'is to express a state, which is the result of an action – in other words, a state that is the result of some change.' The *ma-* prefix differs from *kua* in that a *ma*-prefixed predicate expresses purely the resulting state, while a *kua*-sentence can express the inchoation into the relevant state, as we explain immediately below. Compare also (i) with (ii) to see the difference, with the speaker's volunteered English translations:

(i) **Ma**-hēhē e tāpulu haaku ne tui.
RES.STATE-tear ABS top 1SG.POSS NFUT wear
'The top I'm wearing is torn.'

(ii) **Kua** ma-hēhē e tāpulu haaku ne tui.
PRF RES.STATE-tear ABS top 1SG.POSS NFUT wear
'The top I'm wearing has become torn.'

In future work we hope to investigate the connection between *ma-, kua* and other related elements, including the aspectual effects of reduplication, discussed in Haji-Abdolhosseini et al. (2002).

PRF lose ABS taro because NEG care.for ERG 1PL.EXCL
'The taro got lost because we didn't look after it.'

(65) **Kua** lolelole tei a Tom.
PRF tired recent ABS Tom
'Tom is tired/Tom has become tired.' (speaker's volunteered translations)

(66) **Kua** ita tei a Malia.
PRF angry recent ABS Mary
'Mary is angry/Mary has become angry.' (speaker's volunteered translations)

(67) **Kua** meo tei a ia i mua he tau tagata
PRF bashfulrecent ABS 3SG at front POSS PL person
'He/She is bashful/has become bashful in front of the people.'
(adapted from Sperlich 1997:222; speaker's volunteered translations)

(68) **Kua** fia-momohe oti tuai e tau tagata nā
PRF want-sleep.PL all recent ABS PL person that
'All of those people have gotten sleepy.' (Seiter 1980:66)

Present-state and inchoative readings appear to be the only available interpretations for *kua*-marked stage-level statives. In past-state contexts (such as for example where the taro was lost before, but has since been found, or where Tom was tired before, but is no longer tired), our third author corrects *kua*-sentences to sentences containing past tense morphology. We contend that the present-state and inchoative readings are actually one and the same reading: in all cases, the sentences assert that a change into the state has (recently) happened. This is supported by the fact that states which do not allow any initial transition are bad with *kua,* as shown in (69).

(69) *Context: Talking about fruit.*
Ai maeke a koe ke kai e patu ia. (***Kua**) mata agaia.[17]
NEG can ABS 2SG COMP eat ABS 3SG that (***PRF**) unripe still
'You can't eat that one. It's unripe.'

If the present-state readings of perfect stage-level states are in fact inchoative readings, the next question is whether it is the perfect aspect which is providing the inchoative semantics (as Bauer assumes for Māori). An alternative approach would be to say that the relevant predicates are inherently not actually stative, but instead denote changes-of-state. Suppose that the predicate *ita,* for example, doesn't inherently mean 'be angry', but 'get angry'. This analysis would enable a simple and unified analysis of *kua* as an English-like perfect. It would also make Niuean similar to at least some Salish languages, in which stage-level states like 'hungry' and 'tired' have been argued to be inherently inchoative (Bar-el 2005, Kiyota 2008).

[17] The presence of *agaia* 'still' in (69) would in any case clash with the inchoativity of *kua,* but our third author judges that even without *agaia, kua* is still impossible in this context. However, *Mata* 'unripe' by itself is also marginal; the preferred renditions are either *Mata agaia* 'It is still unripe' or *Ai lā momoho* 'It is not yet ripe.'

This analysis would predict that individual-level states, which inherently cannot denote changes-of-state, will fail to have inchoative readings with *kua*. We show in the next sub-section that this prediction is not upheld. In section 5 we will pursue an analysis along the lines suggested by Bauer, namely that *kua* is an inchoativizer.

4.7 Individual-level states: Inchoative readings

The states to which *kua* attached in the previous sub-section were all stage-level predicates. According to Seiter (1980:8), this is not an accident: he writes that *'kua* and *tuai* are used only with states which are potentially transitory, not inherent.' In our fieldwork we have found a slightly different result. *Kua* can in fact add to individual-level (permanent) states;[18] however, a meaning change is induced: perfect marking coerces an individual-level predicate into having an inchoative, change-of-state interpretation. An initial example of this is given in (70). *Kua* is rejected in the non-inchoative situation in (70)a, but offered in the inchoative situation in (70)b.

(70) a. *Context: A woman has just given birth to twins. The doctor says:*

(#**Kua**)	lalahi	(tei)	e	tau	tama	haau
(#**PRF**)	big	(recent)	ABS	PL	child	2SG.POSS

'Your children are big.'

Comment: 'Kua *and* tei *might only be possible if the babies were somehow measured in the womb before they were born, and they've come out bigger.'*

b. *Context: You haven't seen a friend's twins for a while, and when you see them again, you notice that they have got big.*

Kua	lalahi	(tei)	e	tau	tama	haau
PRF	big.PL	(recent)	ABS	PL	child	2SG.POSS

'Your kids have grown / they're bigger.'

Comment: 'Without kua *or* tei *this would be 'Your children are big'.'*

Similarly in (71), *kua* is infelicitous in the non-inchoative (a) context, and its presence causes the third author to picture the inchoative situation in (b). The same happens in (72) for the predicate *kula* 'red', and in (73) for *malolo* 'strong'.

(71) a. *Context: Complimenting a friend on her daughter's intelligence.*

(#**Kua**)	iloilo	(tei)	e	tama	fifine	haau
(#**PRF**)	intelligent	(recent)	ABS	child	female	2SG.POSS

'Your daughter is intelligent.'

b. *Context: Something has just happened; the daughter has become intelligent.*

Kua	iloilo	tei	e	tama	fifine	haau

[18] Seiter himself gives the example in (i), with a predicate which is traditionally considered to be individual-level.

(i)

Kua	talia	oti	e	tautolu	e	Atua
PRF	believe	all	ERG	1PL.INCL	ABS	god

'We all believe in God.' (Seiter 1980:8)

PRF intelligent recent ABS child female 2SG.POSS
'Your daughter is now intelligent; she has become intelligent.'

(72) a. Kula e tau lau akau
red ABS PL leaf tree
'The leaves are red.'

b. **Kua** kula (tei) e tau lau akau
PRF red (recent) ABS PL leaf tree
'The leaves have turned red.'
Comment: 'It's autumn. Or it could be you're dyeing them.'

(73) *Context: Tom wasn't fishing yesterday, and you were wondering about his health. But today you see him fishing.*
Hī ika a Tom he aho nei …
catch.fish fish ABS Tom LOC day this
'Tom is fishing today …'

a. Liga malolo a ia
EPISTEMIC strong ABS 3SG
'He's probably well.'

b. Liga **kua** malolo (tei) a ia
EPISTEMIC **PRF** strong (recent) ABS 3SG
'He's probably better.'

Given these data, we might expect that *kua* could even add to nouns (a sub-type of individual-level stative predicates), with an inchoative effect. This is in fact the case in Māori, as shown in section 6.1.1 below. However, our preliminary testing of this suggests that *kua* cannot apply to nouns in Niuean, as shown in (74).

(74) * **Kua** faiaoga tei a ia
PRF teacher recent ABS 3SG
'She has become a teacher.'

Our finding that individual-level states *are* possible with the perfect, just with a meaning change, shows that Seiter's (1980) original generalization, although strictly wrong, bore a kernel of truth.[19] The data in (70)-(73) reveal a clear difference between Niuean and languages like

[19] It also predicts that Seiter's cliff example in (19) above will be acceptable with *kua* in a change-of-state context (where the cliff has become high because of an earthquake, for example):
(i) **Kua** tokoluga lahi e mata feutu.
PRF high greatly ABS edge cliff
'The top of the cliff is very high.' (adapted from Seiter 1980:8)
Our third author is not able to interpret (i) as inchoative, but this could be because cliffs are already high by definition, and she prefers to say 'become high*er*', using a different construction.

English when the perfect is applied to individual-level states. In English, 'Your daughter has been intelligent' does not have an inchoative reading (in fact, rather the reverse: it implicates that she is losing her intelligence).[20]

4.8 Activities: Anteriority, in-progress and 'about to' readings

We have seen ordinary anteriority readings of activity predicates with the Niuean perfect in (29) and (31) above. In this section we show that activities allow two further interpretations, both unexpected from an English standpoint.

4.8.1 Activities: In-progress readings

Activity predicates with *kua* allow a reading which is absent from the English present perfect, namely a present-in-progress reading. This interpretation is not mentioned by Seiter (1980), although his grammar contains some examples of it, as shown in (75)-(76).

(75) **Kua** kumi a taha i a koe
PRF search ABS INDF at ABS you
'Somebody is looking for you.' (Seiter 1980:41)

(76) **Kua** kai ika mo e talo a mautolu he mogo nei
PRF eat fish with ABS taro ABS 1PL.EXCL LOC time this
'We are eating fish and taro right now.' (Seiter 1980:70)

Examples of in-progress readings from our own fieldwork are given in (77)-(78). In addition, (31B) above, which received a present perfect translation there, can also be uttered while the speaker is fishing, as shown in (79).[21]

(77) **Kua** kai tei au.
PRF eat recent 1SG
'I am eating.' *or* 'I've already eaten.'

(78) **Kua** gahua tei au.
PRF work recent 1SG
'I'm working.'

(79) **Kua** hī tei au.
PRF catch.fish recent 1SG
'I am fishing.'

[20] The closely related language Tongan also has a perfect marker which gives rise to inchoative readings with individual-level states (Koontz-Garboden 2007). See section 6 for discussion.
[21] While Seiter's examples of ongoing readings in (75)-(76) contain *kua* but no *tuai/tei,* our third author prefers *tei* to be present in ongoing readings. For example, she judges (77) as marginal if *tei* is taken out. We leave further investigation of this for future research.

(80) is another interesting case of an in-progress reading. If 'almost die' counts as an activity, this is an additional case of an in-progress activity.

(80) **Kua** teitei mate tei au
PRF almost die recent 1SG
'I'm nearly dying.'
Comment: 'You can say this while you're running' (feels like you're nearly dying).
Comment: 'Teitei mate au *is more like saying it afterwards; 'I nearly died'.'*

That these are real in-progress readings is confirmed by the extension of (77) given in (81). The discourse context as well as the present adverbial indicate that the eating is taking place at the utterance time.

(81) *Context: Your friend calls you and asks whether you can come out for coffee. You say, 'I can't ...'*
Kua kai tei au (he mogo nei)
PRF eat recent 1SG (LOC time this)
'I'm eating (now).'

It is important to emphasize that these are not universal perfect readings, but rather are ordinary perfects, which however bear interpretations that are unavailable for English present perfects. In other words, (76/80) is *not* accurately translatable as 'I have been eating' (since 2 o'clock/and I still am). We have two pieces of evidence that these are not universal perfects.

First, no adverbs are necessary for the in-progress readings of *kua,* as seen in all the data in this section. According to Iatridou et al. (2001:160), 'truly unmodified perfects are never U[niversal]-perfects.' Iatridou et al. show for stage-level states, individual-level states, and progressives in English that perfects unmodified by adverbials do not have a universal perfect interpretation.

Second, when there *is* an adverb in Niuean, it does not pick out the initial boundary of the Perfect Time Span, which is what adverbials do in universal perfect readings (Iatridou et al. 2001). For example, in (81), the adverbial *he mogo nei* does not pick out the time *since* which I have been eating. Instead, it picks out my current eating time, just like with an ordinary present tense interpretation. We therefore conclude that *kua* allows an ongoing reading with activity predicates, which does not reduce to a universal perfect reading.

4.8.2 Activities: 'About to' readings

Activity predicates allow one further interpretation, an 'about to' reading. A sentence like (82) can be uttered right before one starts to sing. Similarly, (77) above can be uttered immediately before one begins eating.

(82) **Kua** lologo tei au
PRF sing recent 1SG
'I'm singing.'
Comment: 'You say it and then you start singing straight away.'

The 'about to' interpretation is not available for any predicate class apart from activities. This is shown for states, achievements and accomplishments in (83-85) respectively.[22]

(83) *Context: Your friend rings you on the phone and asks you to come over. But you have been up late the past three nights and you know you're about to get tired soon so you don't want to go out. You say 'I'm about to be tired.'*

a. Kamata tei au ke lolelole
begin PRF 1SG COMP tired
'I'm starting to get tired.'

b. # **Kua** lolelole tei au
PRF tired recent 1SG
'I'm tired / I've become tired.'

In (84)a, the volunteered sentence with an achievement predicate contains *ko e* plus *ha ne fai* 'about to' rather than the perfect. When asked about adding *kua,* our third author provides (84)b, which re-phrases so that the predicate is no longer a plain achievement, but is instead modified by *teitei* 'almost'. Finally, the version with the perfect is judged as unacceptable, as shown in (84)c.

(84) *Context: Your friend rings you on the phone and asks you to come over. But you already have someone coming over to your house so you can't leave. You say 'My friend is about to arrive.'*

a. **Ko** **e** hoko mai ha ne fai e kapitiga haaku
KO **ABS** arrive DIR1 about.to ABS friend 1SG.POSS
'My friend is about to arrive.'

b. **Kua** **teitei** hoko mai (tei) e kapitiga haaku.
PRF **nearly** arrive DIR1 (recent) ABS friend 1SG.POSS
'My friend is nearly here.'

c. # **Kua** hoko mai (tei) e kapitiga haaku.
PRF arrive DIR1 (recent) ABS friend 1SG.POSS
'My friend has arrived.'

Finally, the inability of perfect accomplishment predicates to receive an 'about to' reading is illustrated in (85). The consultant volunteers (85)a, which contains literally 'about to begin'. The *kua* sentence in (85)b is rejected.

(85) *Context: Your friend rings you on the phone and asks you to come over. But you were just sitting down to finally mend your broken table that you've been needing to do for a while.*

[22] The discussion in Bauer (1997) suggests a similar difference between activities and accomplishments with the Māori perfect. Bauer gives examples of perfect activities which receive 'start to' interpretations (1997:89), but an example of an accomplishment ('wash the house') which cannot (1997:128).

You say: 'I'm about to fix my table.'

a. **Ko e kamata** ha ne fai au ke taute e laulau malona haaku.
KO ABS begin about.to 1SG COMP make/prepare ABS table broken 1SG.POSS
'I am about to start fixing my broken table.'

b. # **Kua** taute tei au a ē he laulau malonahaaku
PRF make/prepare recent 1SG ABS now ABS table broken 1SG.POSS
'I am fixing my broken table.'

4.9 Accomplishment and achievement predicates: Anterior readings only

Unlike for activity predicates, in-progress readings with *kua* are highly dispreferred for accomplishments, as shown in (86) and (88)a. An in-progress reading for an accomplishment requires an alternative construction, as in (87) and (88)b,c.

(86) **Kua** faka-meā tei e au e motokā haau.
PRF CAUS-clean recent ERG 1SG ABS car 2SG.POSS
'I've cleaned your car.' / # 'I'm cleaning your car.'
Comment: 'Sounds like you've completed it.'

(87) **Ko e** faka-meā (a) au he motokā haau.
KO ABS CAUS-clean (ABS) 1SG LOC car 2SG.POSS
'I'm cleaning your car.'

(88) *Context: You and your friend have been waiting for Tom to arrive for ages and finally your friend rings him. She talks to him on the phone and then tells you 'He's changing his bike tyre.'*

a. # **Kua** hiki (tei) e hui pasikala taholi haana.
PRF change (recent) ABS tyre bicycle 3SG.POSS
'His bike tyre has changed / He has changed his bicycle wheel.'

b. **Haia ne (fāe)** hiki e hui pasikala taholi haana.
right PROG change ABS tyre bicycle 3SG.POSS
'He's changing his bike tyre.'

c. **Ko e** hiki he hui pasikala taholi haana.
KO ABS change POSS tyre bicycle 3SG.POSS
'He's changing his bike tyre.'

Interestingly, when accomplishment predicates undergo nominal incorporation, the in-progress reading becomes at least marginally acceptable.[23] This process, in which the object noun phrase appears without a case marker or possessive and the subject appears in the absolutive case, is termed 'pseudo noun incorporation' by Massam (2001). The effect of pseudo-incorporation on in-progress readings is illustrated in (89). The non-incorporated (89)a is dispreferred with an in-

[23] Thanks to an anonymous reviewer for raising the issue of incorporated accomplishments.

progress interpretation, but the pseudo-incorporated (89)b allows it.

(89) a. **Kua** holoholo fakaeneene e Sione e tau kapiniukiva.
PRF wash carefully ERG Sione ABS PL dish dirty
'Sione washed the dirty dishes carefully.'
?? 'Sione is washing the dirty dishes carefully.' (*Ko e* construction preferred.)

b. **Kua** holoholo kapiniu kiva fakaeneene a Sione.
PRF wash dish dirty carefully ABS Sione
'Sione is washing dirty dishes carefully.'

Other pseudo-incorporated accomplishment predicates such as *taute motokā* 'fix a car' or *hiki hui pasikala taholi* 'change a bike tyre' are not judged by our third author to be fully acceptable with an in-progress reading when *kua* is present. However, the in-progress reading with *kua* is still more readily available than it is for non-incorporated accomplishments. Given the well-known role of non-specific objects in reducing telicity (cf. e.g., Krifka 1998), these facts are predicted in light of Massam's observation (2001:168-9) that pseudo-incorporated nominals are non-specific indefinites.

Just like (non-incorporated) accomplishments, achievements with *kua* seem to allow only an anterior reading. A typical anterior case is shown in (90), and (91) is a case where our third author rejects an in-progress interpretation.[24]

(90) **Kua** moua (tei) e au e uasi haaku.
PRF find (recent) ERG 1SG ABS watch 1SG.POSS
'I have found my watch.'

(91) **Kua** mate au
PRF die 1SG
'I'm dead.'
Acceptable context: If playing paintball, and having received too many hits, being out of the game.
Unacceptable context: If running and feeling like one is dying.

When ongoing readings are attempted with achievements, the consultant sometimes accepts the *kua* sentences in the relevant situations, but always translates them back into English using a present perfect, rather than with a present progressive. We interpret this as meaning that the event is already completed at the time of speech – an assumption which is reasonable, given that achievements are by definition instantaneous events. These are therefore not true ongoing readings in Niuean.

[24] Interestingly, *tei* 'recent' seems to allow ongoing readings with *mate* 'die':
(i) Mate **tei** au.
die **PRF** 1SG
'I'm dying.' *or* 'I'm dead.'

(92) *Context: You have been climbing a mountain and just as you reach the top, you tell someone on your cellphone 'I'm reaching the top.'*

Kua hoko (mai) tei au ki luga he mouga.
PRF arrive (DIR1) recent 1SG to top POSS mountain
'I've reached the top of the mountain.' (speaker's volunteered translation)

(93) *Context: You and your friend have been waiting for Tom to get here for ages and you are wondering where he could be. She gets out her phone to call him, but just then you see him entering the car park. You say 'He's arriving now.'*

Kua hoko mai lā ia.
PRF arrive DIR1 just DEM
'He has just arrived.' (speaker's volunteered translation)

We conclude that just like accomplishments, achievements with *kua* only allow anterior interpretations.[25]

4.11 Summary and storyboard test

In this section we have seen several parallels between the Niuean perfect and the English one; we have also seen several important differences. The results are summarized in Table 2, with the differences highlighted by shading.

Table 2: Properties of the English and Niuean perfects

	English	Niuean
experiential reading	✓	✓
universal perfect reading	✓	✗
result state reading	✓	✓
adverbial restrictions	✓	✓
lifetime effects / future possibility	✓	✓
temporal reading of stage-level states	anteriority	present, inchoative
temporal reading of individual-level states	anteriority	inchoative
temporal reading of activities	anteriority	anteriority, in-progress, about-to
temporal reading of accomplishments	anteriority	anteriority

[25] One apparent exception to the claim that achievements with *kua* do not allow in-progress readings is given in (i).

(i) *Context: You are watching a guy walk across Niagara Falls on a tightrope on TV. He trips and begins to fall down and down. You say 'Oh no, he's falling!'*

Oi auē, **kua** tō hifo e tagata kō!
groan bitterly **PRF** fall downward ABS man that.there
'Oh no, he's falling!'

However, whether (i) is an exception depends on the precise lexical semantics of the verb 'fall' – whether it refers here to the instant at which he leaves the tightrope (in which case (i) is a standard anteriority case), the process of falling downwards, or the moment of impact. We leave this issue for future research.

temporal reading of achievements	anteriority	anteriority

These generalizations are supported not only by the secondary and elicited data presented above, but also by a storyboard elicitation task. The storyboard 'Miss Smith's Bad Day' was designed to include a range of typical perfect contexts, a range of contexts in which perfects are expected to be infelicitous, and in-progress and inchoative readings of predicates from various aspectual classes. The pictures were then shown to our third author, who told the story in her own words in Niuean. The pictures and the English script for this storyboard can be found at http://www.totemfieldsotryboards.org/stories/miss_smith/. The resulting story provided support for the empirical generalizations presented above; we present the main findings in this section.

In experiential contexts, *kua* was volunteered, as shown in (94).

(94) Miss Smith: Ko hai **kua** toli e mouga?
KO who **PRF** climb ABS mountain
'Who has climbed a mountain?'

Child: Ko au, ko au! **Kua** toli e au e mouga.
KO 1SG KO 1SG **PRF** climb ERG 1sg ABS mountain
'Me, me! I have climbed a mountain.'

Kua was also volunteered in recent past contexts, as in (95):

(95) **Kua** mate tei e kumā ha tautolu. **Kua** mate tei.
PRF die recent ABS rat POSS 1PL.INCL **PRF** die recent
'Our rat has died . It has died.'

In lifetime-effect contexts, *kua* was *not* volunteered, as predicted and as shown in (96).

(96) Pehē a Miss Smith, "Ko Sir Edmund Hillary. Ne toli a ia ki luga he
say ABS Miss Smith KO Sir Edmund Hillary PST climb ABS 3SG to top POSS
mouga ko Everest."
mountain KO Everest
'Miss Smith says, "This is Sir Edmund Hillary. He climbed to the top of Mount Everest."'

In sentences with past-time adverbials, *kua* was absent, as we expect:

(97) Ui a Mary, 'Naha, na mate ne afi. Iloa e au, na kitia
say ABS Mary no PST die yesterday know ERG 1SG PST see
e au ne afi ne mate.'
ERG 1SG yesterday NFUT die
'Mary calls out, "No, it died yesterday. I know, I saw it die yesterday."'

With stative predicates, *kua* was volunteered both with present-state interpretations, as in (98), and with inchoative interpretations, as in (99). This fits the data presented in previous sections and is predicted by our analysis.

(98) **Kua** fia kupu pilo a ia ke he tau fānau.
PRF want swearword ABS 3SG to PL children
'She wants to swear at the children.'

(99) **Kua** mohe tei a Bob, **kua** mohe tei a Bob.
PRF sleep recent ABS Bob **PRF** sleep recent ABS Bob
'Bob has fallen asleep. Bob has fallen asleep.'

And we also see states which are not interpreted as inchoative being volunteered without *kua,* as in (100). (Our prediction is that *kua* would be rejected in these contexts, and this has been confirmed in follow-up elicitation.)

(100) Ai mitaki ke kupu pilo i mua he tau fānau.
NEG be.good COMP swearword to in.front.of LOC PL children
'It is not good to swear in front of children.'

(101) uka hā ia a Tom
naughty EMPH ABS Tom
'Tom is naughty.'

Finally, *kua* was volunteered in past perfect contexts, as shown in (102) and (103). (103) again illustrates the inchoative effect.

(102) *Context: Sir Edmund Hillary went down Mount Everest. But with the rain that had fallen, the appearance of the track looked bad.*
Kua tō e uha.
PRF fall ABS rain
'It had rained.'

(103) *Context: As in (102).*
Kua pala lahi.
PRF wet very
'It (= the track) had become very wet.'

In short, the storyboard method confirms that in semi-spontaneous speech, *kua* functions as a perfect aspect and also as an inchoativizer. In the next section, we present our analysis.

5 Analysis

We have seen that the Niuean perfect differs from the English one in a number of ways: it lacks a universal perfect interpretation, and it gives rise to various unexpected interpretations with the different aspectual classes. In this section we propose a unified analysis according to which the Niuean perfect places an initial change-of-state inside the Perfect Time Span.

5.1 Building blocks

In this sub-section we lay out the theoretical building blocks of our analysis. The first is the Perfect Time Span. This is an interval whose left boundary is provided by some temporal adverbial, and whose right boundary is provided by tense, and within which an event is placed by the perfect (Iatridou et al. 2001:158). This is a version of McCoard's Extended Now approach to the perfect, except that the Perfect Time Span (PTS) can apply to all perfects, not just present perfects. The PTS operator is defined in (104). It is interpreted relative to a context c. It applies to a time t and returns a contextually-determined interval which has t as its final subinterval (see Iatridou et al. 2001:158, Portner 2003:496, among others, for similar definitions).

(104) $PTS_c(t)$ = the interval of which t is a final subinterval and whose left boundary is determined by c.

The second building block is a way to model changes-of-state; here we make use of Dowty's (1977, 1979) BECOME operator. Simply put, for any predicate P, a BECOME(P) event is a transition from not being a P-event, into being a P-event. The definition is given in (105).

(105) [(BECOME(P))(e)] is true at *I* iff there is an initial boundary interval *J* for *I* such that ¬(P(e)) is true at *J* and there is a final boundary interval *K* for *I* such that P(e) is true at *K* (adapted from Dowty 1977:52).[26]

5.2 Unifying the readings of *kua*

As shown in Table 2, the Niuean perfect induces a number of different readings, in part depending on the lexical aspectual class of the predicate. Our goal is a unified analysis of the perfect, and therefore we need to determine whether the different readings are derivable from a unified semantic core.

As a first step in this unification process, we propose that the present state and inchoative readings of stage-level states, the inchoative reading of individual-level states, and the in-progress reading of activities are all the same reading. They are simply all eventualities in which there has recently been a change into the state or event denoted by the predicate. Thus, if one is tired, it is because one has become tired, and if one is dancing, it is because one has started to dance.

The next step is to observe that even the anterior readings – where an event or state is over before the utterance time – involve an initial change-of-state. If one has danced, for example, it is because one started to dance in the past. Given this, we can view the Niuean perfect as placing an initial change-of-state at some point within the Perfect Time Span. The eventuality may or may not have also finished before the utterance time. The temporal schema of *kua* is represented in the timeline in Figure 1, where 'C.O.S.' represents the initial change-of-state, 'UT' is the Utterance Time, and the Perfect Time Span is indicated by the span above the timeline.

[26] Dowty's definition is identical except that it does not make use of events:

(i) [BECOME φ] is true at *I* iff there is an initial boundary interval *J* for *I* such that ¬φ is true at *J* and there is a final boundary interval *K* for *I* such that φ is true at *K* (Dowty 1977:52).

Figure 1: Timeline of the Niuean perfect

We include the Perfect Time Span in the analysis (rather than simply saying that *kua* places a change-of-state before the utterance time) in order to capture the similarities between the Niuean perfect and the English one – in particular the current relevance/lifetime effects, and the weak adverbial restrictions. Although we do not go into the precise mechanism through which these effects arise, we follow the majority of the literature, which assumes that the pragmatic effects of the present perfect derive from either the PTS, or the present tense (or both, given that a crucial feature of the PTS for a present perfect is that it abuts the utterance time).

The lexical entry for the Niuean perfect is given in (106).

(106) $[\![\textbf{PRF}]\!]^c = \lambda P\, \lambda t\, \exists e\, [(\text{BECOME}(P))(e) \,\&\, \tau(e) \subseteq \text{PTS}_c(t)]$

This says that the perfect takes a predicate P and a time t, and asserts that there is an event of BECOME(P) within the Perfect Time Span of t. (106) enforces that the eventuality corresponding to the lexical predicate starts within the PTS, but does not require that it finish within the PTS. This is because the BECOME(P) eventuality, which is required to fall within the PTS of t, is only the initial change-of-state into the eventuality. The fact that the eventuality may or may not also *finish* within the PTS will allow us to derive both anterior interpretations and present state/in-progress interpretations.[27]

Let us go through how the right results are achieved for each predicate class. A stage-level state case is illustrated in (107). (We assume that external arguments are added in a neo-Davidsonian fashion, following Kratzer 1996.) Because we are focusing on present perfects in this paper, and we have not investigated the semantic properties of the Niuean present tense, we simply assume that the sentences are interpreted with respect to the utterance time, t_0.

(107) $[\![\textbf{PRF} \text{ (Harry happy) }]\!]^{c,t0} = \exists e[(\text{BECOME}(\text{happy}))(e) \,\&\, \text{PATIENT}(e) = \text{Harry} \,\&\, \tau(e) \subseteq \text{PTS}_c(t_0)]$

'There is an event e within the PTS of t_0, and e is a transition from Harry not being happy to being happy.'

This denotation correctly predicts present state and inchoative readings for stage-level states. It does not automatically rule out anterior readings (where a state held in the past and no longer holds at the utterance time); as mentioned above, our third author prefers past-tense morphology in such situations. However, plausible pragmatic reasoning involving Grice's Quantity maxim correctly predicts the choice of a past tense form in such cases. The past-tense form unambiguously places the state prior to the utterance time and thus gives more specific information than a *kua*-marked form would.

[27] Thanks to an anonymous reviewer for inviting us to clarify this aspect of the analysis, and for suggesting that we define the PTS more precisely.

An individual-level state case is shown in (108).

(108) [[**PRF** (Ron tall)]]^{c,t0} = ∃e[(BECOME(tall))(e) & PATIENT(e) = Ron & τ(e) ⊆ PTS_c (t_c)]

'There is an event e within the PTS of t_0, and e is a transition from Ron not being tall to being tall.'

Individual-level states are exactly the same as stage-level states, except that there is a more noticeable effect because individual-level states start out as permanent, and therefore do not originally have any initial change-of-state in their denotation. The addition of *kua* to an individual-level state thus results in a noticeable meaning change, whereby the state has only begun to hold within the Perfect Time Span. This accounts for the data in section 4.7 above.

The effect of *kua* on an achievement predicate is illustrated in (109).

(109) [[**PRF** (Voldemort arrive)]]^{c,t0} = ∃e [(BECOME(arrive))(e) & PATIENT(e) = Voldemort & τ(e) ⊆ $PTS_c(t_0)$]

'There is an event e within the PTS of t_0, and e is a transition from not being an arrival by Voldemort to being an arrival by Voldemort.'

Something interesting happens with achievements, namely that the inchoation introduced by the perfect is redundant. This is because achievements are already internally BECOME events (transitions), and are viewed as temporally instantaneous. This is illustrated in (110), with *arrive* analyzed as 'BECOME(here)'.

(110) [[**PRF** (Voldemort arrive)]]^{c,t0} = ∃e [(BECOME(BECOME(here)))(e) & PATIENT(e) = Voldemort & τ(e) ⊆ $PTS_c(t_0)$]

If an arrival is an instantaneous event, then starting to be an arrival is the same as being an arrival (by the time the arrival has started, it has already finished). The only effect of the perfect on an achievement, then, is to place an event of the relevant type within the PTS. This correctly predicts that perfect achievements only have anterior readings.

An activity predicate is illustrated in (111).

(111) [[**PRF** (Hermione work)]]^{c,t0} = ∃e[BECOME(work)(e) & AGENT (e) = Hermione & τ(e) ⊆ $PTS_c(t_0)$]

'There is an event e within the PTS of t_0, and e is a transition from Hermione not working to working.'

This denotation correctly predicts anterior and in-progress readings, depending on whether the activity happens to have also finished within the PTS, or not. There is one wrinkle, however: it is not immediately clear why the Gricean reasoning invoked for statives above does not similarly apply here, mandating the use of a past-tense marker when an activity is completed before the utterance time. The difference probably has to do with independent differences between activities and states with respect to how ongoing eventualities may otherwise be marked. For example, eventive predicates are more likely to appear with the *ko e* construction than statives are. Since pragmatic reasoning relies on comparison between all available grammatical alternatives, the results may well be predicted to be different for activities vs. states. Further

research is needed to work this idea out in detail.[28]

Finally, we turn to accomplishment predicates. The denotations here are slightly more complicated, because accomplishments have internal structure. Following Rothstein (2004), we assume that an event of building a house involves two sub-events, the first of which is a building process and the second of which is an event of the house transitioning into being built:

(112) [[build the house]] = $\lambda e[\exists e_1 \exists e_2[e =^s (e_1+e_2)$ & build(e_1) & (BECOME(built))$(e_2)]]$

Adding the Niuean perfect to such an event-type gives us (100):

(113) [[**PRF** (Dumbledore build the house)]]^{c,t0} = $\exists e[$(BECOME($\lambda e[\exists e_1 \exists e_2[e =^s (e_1+e_2)$ & (build)(e_1) & AGENT (e_1) = Dumbledore & PATIENT (e_1) = the house & BECOME(built)(e_2) & PATIENT (e_2) = the house]))(e) & $\tau(e) \subseteq PTS_c(t_0)]$
'There is an event e within the PTS of t_0, and e is a transition from not being an event of Dumbledore building the house to being an event of Dumbledore building the house.'

The question here is, at what point does an event transition from not being a building-a-house event to being a building-a-house event? Intuitively, this happens at the culmination point of the building (the moment when the last brick is placed, for example). This reasoning underlies the well-known 'Imperfective Paradox' (Dowty 1977), whereby an accomplishment event is not entailed to have taken place until its final endpoint has been reached. For example, (114)a does not entail (114)b, because in (114)a, the event may not have reached its endpoint. This contrasts with activities, as in (115), where as soon as event has started, it counts as an instance of that event-type.

(114) a. Toby was building a house. DOES NOT ENTAIL
b. Toby built a house.

(115) a. Toby was dancing. ENTAILS
b. Toby danced.

If we assume, then, that an event transitions from not being a building-a-house event to being a building-a-house event at the moment when the last brick is placed, our denotation will require the culmination point of the accomplishment to occur during the PTS. We will then correctly predict only anteriority readings for accomplishments modified by *kua.*[29]

[28] A second, potentially more serious, issue with the analysis of activity predicates concerns the 'about to' readings discussed in section 4.8.2; we currently do not derive these.

[29] One might object that just as the initial building period does not count as a complete building-a-house event, nor does the culmination point alone count as a building-a-house event. An alternative approach would then be that BECOME(build a house) is true only at the entire interval during which the house is built (cf. Dowty's 1979:142-145 discussion of a similar issue for *John walked from the Post Office to the Bank*). Under this view, our analysis of *kua* would require the entire accomplishment to take place with the Perfect Time Span, and we would still correctly predict only anteriority readings.

5.3 Explaining the lack of universal perfects

We saw above that the Niuean perfect lacks universal perfect readings. In this section we show that our analysis successfully predicts this absence.

According to Iatridou et al. (2001), the universal perfect reading requires the predicate to hold throughout the PTS. As such, it requires a homogeneous eventuality, an eventuality which satisfies the Subinterval Property, given in (116):

(116) *Subinterval property*: A predicate P has the subinterval property if and only if it follows from the truth of P(e) at an interval t that P(e) is true at all subintervals of t. (adapted from Dowty 1986:42)

This explains why in English, only statives and progressives allow U-perfect readings, as shown in (117).[30]

(117)	a.	Tom has been sick since December.	UNIVERSAL PERFECT
	b.	Mary has been singing that song since this morning.	UNIVERSAL PERFECT
	c.	Tom has worked since December.	NO UNIVERSAL PERFECT
	d.	Mary has bought a car since this morning.	NO UNIVERSAL PERFECT

Recall now that according to our analysis, the Niuean perfect places a BECOME event within the perfect time span. BECOME events are changes-of-state, and thus crucially non-homogeneous. We therefore correctly predict that the Niuean perfect lacks U-perfect readings.

This explanation is similar to Iatridou et al.'s explanation for why the Greek perfect lacks universal perfect readings. They argue that U-perfect readings are disallowed in Greek because the stem on which the perfect aspect is built is necessarily perfective (rather than imperfective), and perfectives in Greek have culminated or inchoative (i.e., non-homogeneous) semantics. This is illustrated in (118)-(119). (118) shows that a perfective stative in Greek is already interpreted inchoatively. Consequently, when a perfect adds on top of the perfective stem as in (119), no universal perfect reading results.

(118)	o	ɣianis	aɣapise	tin	Maria	to	1981
	the	Jannis	love-PST-**PFV**-3SG	the	Mary	in	1981
	'John started loving/fell in love with Mary in 1981.'						(Iatridou et al. 2001:171)

(119)	o	ɣianni	eχi	aɣapisi	tin	Maria
	the	Jannis	has-3SG	loved	the	Mary
	'John has started loving/fallen in love with Mary.'					(Iatridou et al. 2001:171)

The difference between the two languages is that in Greek, the non-homogeneity is contributed by the perfective which adds below the perfect, but in Niuean, non-homogeneity is contributed by the perfect itself.

[30] Activities do not have the subinterval property. For an activity predicate P(e) which is true at t it only follows that P(e) is true for subintervals of t down to a certain size (Dowty 1986:42).

5.4 Pragmatic effects

In previous sub-sections we have shown that the temporal interpretation of the Niuean perfect with all aspectual classes follows from an analysis of it as placing an initial change-of-state within the Perfect Time Span. As outlined in section 4, the Niuean perfect also shares certain pragmatic effects with the English perfect, including current relevance/lifetime effects and adverbial restrictions. We have not said anything about how our analysis deals with these pragmatic effects. As a reviewer points out, the inference that the result state holds at the utterance time does not follow automatically from the semantic analysis. The analysis requires that the relevant eventuality begins within the PTS, and allows it also to finish within the PTS. It follows that any result state could also be undone before the utterance time.

The problem of how to derive the pragmatic effects of the present perfect is a topic of much debate in the literature; see for example McCoard (1978), Inoue (1979), Moens and Steedman (1988), Spejewski (1996), Katz (2003), Portner (2003), Pancheva and von Stechow (2004), Chung (2012), among many others. Adjudicating between the many proposals for how these pragmatic effects are derived goes beyond the bounds of the current paper. Importantly, however, many analyses derive these additional effects from the presence of the Perfect Time Span, and/or the present tense (since the effects arise only with present perfects). Present tense-based analyses such as those of Portner (2003) also utilize the PTS; for Portner, the present tense itself places an event within the Extended Now (2003:496). Since our analysis also involves the PTS, we can simply assume here that the PTS requirement of the Niuean perfect will derive the presence of current relevance effects and the adverbial restrictions.

In the next section we turn to a comparison with other languages.

6 Cross-linguistic considerations

In this section we broaden the discussion to other languages. In 6.1 we look at perfects with similar properties to the Niuean one, concentrating primarily on the related languages Māori and Tongan. In 6.2 we discuss the recently proposed category of iamitives (Olsson 2013).

6.1 Perfects in Māori, Tongan and other languages

6.1.1 Māori

Māori has a morpheme *kua* which is clearly cognate to Niuean *kua,* and which is widely agreed to express a perfect meaning (Bauer 1997:88,117; Herd 2005:24; Harlow 2007:138). Bauer (1997:118) observes that Māori *kua* is offered in all of Dahl's (1985) prototypical perfect contexts; it can be used to express a past event with current relevance, the present result of a past situation, or an experiential perfect interpretation, as well as in 'hot news' situations. Typical examples are given in (120)-(121) (we use the original glossing for examples from languages other than Niuean).

(120) **Kua** horoi-a e koe ō niho.
TAM clean-pass by IIsg your teeth
'Have you cleaned your teeth?' (Bauer 1997:118)

(121) **Kua** tae mai te ope i Rotorua.
TA arrive Dir. Det. group P Rotorua
'The group has arrived from Rotorua.' (Harlow 2007:156)

However, it is also clear that Māori *kua,* like its Niuean counterpart, differs from the English perfect in several ways. First and foremost of these differences is that Māori *kua* has the ability to induce inchoative readings. This is explicitly discussed by Bauer, who writes that *kua* marks 'inchoative aspect with state intransitive and experience verbs' (1997:88). She gives examples such as in (122)-(124).

(122) **Kua** tangi te piana. **Kua** kanikani ētahi o ngā tāngata
TAM sound the piano **TAM** dance some of the(pl) people
'The piano has begun to play. Some of the people have started dancing.' (Bauer 1997:89)

(123) **Kua** moe a Tamahae i runga i te teepu
T/A sleep pers Tamahae at top at the table
'Tamahae has gone to sleep on the table.' (Bauer 1993:432)

(124) **Kua** toto tana ihu
TAM bleeding his nose
'His nose has started bleeding / is bleeding.' (Bauer 1997:89)

Although Harlow (2007) does not explicitly describe *kua* as inchoative, he provides many examples where *kua* gives an inchoative interpretation with stative predicates, including *kua ora* 'has recovered, has got well (again)' (from *ora* 'healthy, well, alive', p. 97), *kua tangata whenua* 'become locals' (from *tangata whenua* 'person/people of the land', p. 103), and *kua pō* 'It has become night' (from *pō* 'night', p. 103). Further inchoative examples are given in (125)-(126).

(125) **Kua** whakamā rātou i tō.rātou kaha kūare.
TA shame 3Pl. P their strong ignorant
'They became ashamed because of the extent of their ignorance.' (Harlow 2007:156)

(126) ngā mātua-tīpuna **kua** whetū-rangi-tia
Det.Pl. parent-ancestor.Pl. **TA** star-heaven-Pass.
'the ancestors who have become stars of the heavens' (Harlow 2007:120)[31]

Just like in Niuean, Māori states with *kua* can also be translated into English with a simple present tense, as for example in (127).

(127) **Kua** hiahia ia ki te hooiho raa
T/A desire IIIsg DO the horse dist
'He wants that horse.' (Bauer 1993:449)

The extent to which inchoative readings arise with different aspectual classes in Māori is not completely clear, but the most robust inchoative readings seem to be with statives, just like in

[31] See also Taylor (2014:26) for a 'real-life' inchoative use of *kua wheturangitia* 'become stars'.

Niuean. According to Bauer (1993:443), 'it appears that *kua* marks ingressive aspect only with semantically stative predicates'; Bauer states that (128), which contains an accomplishment predicate, does *not* have an ingressive/inchoative interpretation:[32]

(128) **Kua** horoi raaua i te whare
T/A clean IIId1 DO the house
'They've washed the house.' (Bauer 1993:442)

Other similarities between Māori and Niuean *kua* include the availability in both languages of past narrative uses (see section 2 above and section 7 below), and the possible absence of a universal perfect interpretation in Māori, just as we have shown for Niuean. Bauer (1993:431) writes that it is 'not clear' whether apparent examples of universal perfects 'genuinely show *kua* with this function.' Finally, there may even be parallels in the extent to which the 'about to' readings are allowed. We showed above that the 'about to' reading is available only with activity predicates. Bauer gives examples of perfect activities which receive 'start to' interpretations (1997:89), but an example of an accomplishment ('wash the house') which cannot (1997:128).

The available formal literature on Māori *kua* includes to our knowledge only Herd (2005), who presents a distributed morphology analysis based on the feature geometric approach of Cowper (2005). Herd proposes (2005:29) that Māori *kua* is characterized by the features [event], [precedence], and [entirety]. The feature [event] means that a clause is eventive (rather than stative), while [precedence] entails that '*at least one* moment associated with the relevant event or state … is prior to the temporal anchor' (Herd 2005:7). However, when [precedence] has the dependent feature [entirety], then 'all of the moments associated with a given event or state occurred prior to the moment supplied by the temporal anchor' (Herd 2005:7). According to this analysis, the inchoative readings with stative predicates arise because *kua*'s [event] feature forces a change-of-state reading for inherently stative verbs (2005:26). Herd's approach differs from ours, because we directly encode change-of-state semantics in the meaning of Niuean *kua.* Herd's approach may however bear some conceptual similarity to Koontz-Garboden's coercion analysis of Tongan *kua,* outlined in the next section.

6.1.2 Tongan

Besides Niuean, the other language in the Tongic sub-group of Polynesian is Tongan. At first glance, Tongan has a perfect which is not only cognate, but strikingly similar semantically to that of Niuean. According to Koontz-Garboden (2007:128), the Tongan perfect marker *kuo* 'situates the event as over, but still with some relevance to the present time, much like the so-called 'current relevance' property characteristic of certain readings of the perfect aspect.' A simple example is given in (129).

(129) **Kuo** lea 'a Pita
PRF speak ABS Pita

[32] Bauer (1997:118) also writes that it is not clear whether *kua* can be used for a situation which began in the past and is still continuing. (Recall that in Niuean, ongoing readings are possible only with states and activities, not with accomplishments and achievements.)

‘Pita has spoken.’ (Koontz-Garboden 2007:128, from Churchward 1953:37)

More importantly, Tongan *kuo* exhibits inchoativity effects, as shown in (130)-(131) for the individual-level stative verb *loloa* ‘long’.

(130) *Context (non-inchoative)*: *Sione meets Mele for the first time; observing that she has long hair, he remarks:*

\# **Kuo** loloa ho ‘ulu
PRF long 2SG.POSS hair
‘Your hair is long.’ (Koontz-Garboden 2007:132)

(131) *Context (inchoative): Sione already knows Mele, and at time t-1 he sees Mele and observes that she has short hair. Sione then runs into Mele at time t and her hair has grown significantly between t-1 and t:*

Kuo loloa ho ‘ulu
PRF long 2SG.POSS hair
‘Your hair has grown (lengthened).’ (Koontz-Garboden 2007:132)

However, Koontz-Garboden offers an analysis whereby it is not *kuo* itself which induces inchoativity, but rather a pragmatic coercion process which arises with several different constructions. As evidence for this, Koontz-Garboden firstly shows that it is not just *kuo* which induces inchoativity; the imperfective marker *‘oku* in combination with a rate adverb like ‘slowly’, as well as the predicate *‘osi* ‘finish’ also result in change-of-state meanings. Koontz-Garboden argues that these different constructions all have semantic properties which are incompatible with applying to a stative predicate. Consequently, a state is coerced to a change-of-state in the presence of these other operators.

The predicate ‘finish’, which in Tongan induces inchoativity, does not work similarly in Niuean. Compare the Tongan example in (132), where the stative predicate undergoes coercion to a change-of-state, with the Niuean sentence in (133), where a similar reading is not possible. In fact, our third author rejects *oti* with stative predicates. [33]

(132) Na‘e **‘osi** viviku ‘a e tauveli.
PFV **finish** wet ABS DEF towel
(a) #The towel finished being wet, i.e. is presently dry.
(b) ‘The towel got/had become wet.’ (Koontz-Garboden 2007:134)

(133) ??**Oti** e tau fua lākau he momoho.
finish ABS PL fruit plant COMP ripe
Intended: ‘The fruit finished becoming ripe.’

Rate adverbs, on the other hand, do induce inchoativity in Niuean, just like in Tongan, as shown in (134)-(136); either *kua* or a rate adverb gives rise to an inchoative reading for *momoho* ‘ripe’. *Kua* and a rate adverb can also co-occur, as shown in (137).

[33] Thanks to an anonymous reviewer for asking us to clarify the Niuean facts here, and in particular for pushing us to investigate the Niuean counterpart of *‘osi.*

(134) Momoho e tau fua lākau.
ripe ABS PL fruit plant
'The fruit are ripe.'

(135) **Kua** momoho e tau fua lākau.
PRF ripe ABS PL fruit plant
'The fruit have become ripe.'

(136) Momoho **vave** e tau fua lākau.
ripe **quickly** ABS PL fruit plant
'The fruit ripen quickly.'

(137) **Kua** momoho **vave** e tau fua lākau.
PRF ripe **quickly** ABS PL fruit plant
'The fruit have ripened quickly.'

Note however that the presence of other inchoative elements, or inchoative coercion processes, does not by itself argue against the inchoativity of the perfect morpheme. There is no reason why there should not be more than one source of inchoativity in a language, and indeed there often is; see section 7 for discussion.

Koontz-Garboden's second piece of evidence that Tongan *kuo* is not itself semantically an inchoativizer is that it is only the *resultative* reading of *kuo* which induces inchoativity. States with *kuo* also allow a non-inchoative universal perfect reading, as shown in (138), and an existential stative reading, as in (139).

(138) **Kuo** loloa hoku ʻulu, talu pe mei he 1980
PRF long 1SG.POSS hair since and since DEF 1980
'My hair has been long since 1980 (still long now).' (Koontz-Garboden 2007:142)

(139) **Kuo** (ʻosi) kulokula tuʻo taha hoku fale
PRF (finish)red occasion one 1SG.POSS house
'My house has been red before (not red now).' (Koontz-Garboden 2007:142)

Interestingly, Tongan and Niuean differ in exactly this respect, namely in whether their perfects allow universal and experiential readings of statives. The lack of universal perfect readings in Niuean was already illustrated in section 4.2 above; an additional example, forming a minimal set with the Tongan data, is given in (140).

(140) *Context: I see your long hair and ask you how long it's been like that.*

a. Loa e ulu haaku tali mai he tau 1980.
long ABS hair 1SG.POSS since from LOC year 1980
'My hair has been long since 1980.'

b. * **Kua** loa e ulu haaku tali mai he tau 1980.

PRF long ABS hair 1SG.POSS since from LOC year 1980
'My hair has been long since 1980.'

(141) shows that Niuean *kua* also disallows experiential stative readings with stative predicates, again forming a minimal pair with the Tongan data.

(141)* **Kua** kula **tei** e fale haaku he vaha tuai
PRF red **PRF** ABS house 1SG.POSS LOC time old
'My house has been red before (not red now).'

In Tongan, both universal perfect and experiential readings are predicted to be possible with statives (without inducing an inchoative reading), because neither U-perfects nor experiential perfects are incompatible with stative inputs, therefore coercion does not take place. In Niuean, on the other hand, it is the perfect morpheme itself which enforces inchoativity. Hence, U-perfects and experiential statives are ruled out. In short, there are crucial empirical differences between Tongan and Niuean, which make the pragmatic coercion account impossible for Niuean. Instead, in Niuean the perfect is semantically an inchoativizer, as we argued above.

These empirical differences between perfects in closely related languages raise further questions to do with the diachronic path along which the changes took place, and also raise empirical questions about perfects in other Polynesian languages. There are clues that other Polynesian languages may have inchoative readings in the perfect, but much more research is necessary to determine whether these other perfects pattern like Tongan, Niuean, or neither. In Fijian, the aspectual marker *saa,* which is classified as a perfect by Dahl and Velupillai (2011) 'indicates that an action/state contrasts with a previous one' (Schütz 1985:262-263; Schütz glosses *saa* as 'contrast (past)'). An example is given in (142). Schütz notes that (142) 'implies that Tē had been ill, but is no longer' (1985:262). This parallels the reading of a Niuean perfect stative, rather than an English one.[34]

(142) **Saa** bula vinaka o Tē.
PRF health good PRP Tē
'Tē's well (now).' (Schütz 1985:262)

There are also indications that inchoative perfects are attested in completely unrelated language families. For example, the St'át'imcets (Lillooet Salish) aspectual auxiliary *plan* gives rise to lifetime/future possibility effects just like a present perfect, but displays temporal readings consistent with an inchoative analysis. Specifically, St'át'imcets *plan* allows only anteriority readings with achievements and accomplishments, but gives on-going readings with activities and present-state readings with states (Davis 2012, Matthewson 2013). Davis (2012) analyzes *plan* as foregrounding the state following a transition, which can be either a telic culmination, or an initial change-of-state. He argues that with event-types which lack transitions (i.e., states), *plan* supplies a transition. This is very similar to what we have proposed for the inchoative semantics of the Niuean perfect; the only difference is that we model the change-of-state as

[34] *Saa* seems to have perfect-like pragmatic properties; Schütz notes, following Arms (1978:1246), that *saa* 'indicate[s] that a certain state or event has particular relevance to the contemporaneous moment.'

always being an *initial* transition (never a telic culmination).

Another related construction is found in Saisiyat (Austronesian; Guekguezian 2013a,b). The Saisiyat morpheme *ila* induces inchoative readings with individual-level states, as in (143). With stage-level states, it allows either inchoative or universal perfect readings, as shown in (144). Guekguezian (2013a) explicitly draws a parallel between Saisiyat *ila,* Niuean *kua* and St'át'imcets *plan.*

(143) Ataw kamanra:an **ila**.
Ataw male **ILA**
'Ataw has become male.' (Guekguezian 2013b:12)

(144) Ataw kerpee **ila**.
Ataw fat **ILA**
'Ataw has been and is (still) fat.' / 'Ataw has become fat.' (Guekguezian 2013b:1)

Guekguezian argues that Saisiyat *ila* is a perfect aspect which introduces a Perfect Time Span, but also requires the presence of a silent telic operator. The telic operator 'generates the target state of telic predicates and shifts atelic predicates into inchoatives' (Guekguezian 2013b:26). Guekguezian's analysis differs from ours in that it separates out the inchoativity from the perfect morpheme itself. This difference partly reflects slightly different empirical facts, including the fact that unlike Niuean *kua, ila* allows universal perfect readings.

6.2 Iamitives

In this final sub-section we discuss a related set of constructions, found mainly in South-East Asian languages, which are termed 'iamitives' by Olsson (2013). Iamitives have discourse functions similar to a perfect, but allow inchoative or present-state readings with statives. Olsson writes (2013:43) that there are

> two parameters that appear to capture the principal features of iamitive-like markers: (1) the notion of a "new situation" that holds after a transition; and (2) the consequences that this situation has at reference time for the participants in the speech event. Iamitives have the former feature in common with 'already', while the latter is shared with the perfect.

There are similarities between Olsson's description of iamitives and the Niuean perfect: both involve a change-of-state, and both involve current relevance. However, by applying many of Olsson's tests for the properties of iamitives, we have established that Niuean *kua* acts unlike an iamitive in important respects. In the remainder of this section we present the evidence for this.

First, in contexts where a state represents the end-point of a natural course (such as going from non-rotten to rotten), iamitives are obligatory (Olsson 2013:18). However, *kua* is optional here, as shown in (145).

(145) *Context: Somebody takes a piece of fruit.*
Ai maeke a koe ke kai e patu ia. (**Kua**) popo (tei).
NEG can ABS 2SG COMP eat ABS 3SG that (**PRF**) rotten (recent)
'You can't eat that one. It's rotten.' (adapted from Olsson 2013:18)

Second, in situations where there is no prior expectation that the relevant event would take place, iamitives are not offered (Olsson 2013:21) and are judged unacceptable in some languages (Olsson 2013:24). In contrast, *kua* is perfectly acceptable in such cases, as shown in (146)-(149).[35]

(146) *Context: At a party, commenting on which guests arrived.*

Homo,	(**kua**)	hau	tei	e	agukolo	haaku.	Hau	ke
nice	(**PRF**)	come.SG.DIR1	recent	ABS	uncle	1SG.POSS	come.SG.DIR1	COMP
ō	ke	tala	ki	ai.				
go	COMP	talk	to	3SG				

'Good, my uncle has come. Let's go talk to him.' (adapted from Olsson 2013:21)

(147)

(**Kua**)	galo	(tei)	e	ualete	haaku –	Maeke	nakai	a	koe	ke
(**PRF**)	lost	(recent)	ABS	wallet	1SG.POSS	can	not	ABS	2SG	COMP
lagomatai	au	ke	kumi?							
help	1SG	COMP	search							

'My wallet is lost/I've lost my wallet – Can you help me find it?'
(adapted from Olsson 2013:24)

(148) *Context: You are at a family gathering and your cousin comes running up and says:*

Kua	tō	(tei)	a	Agukolo Bill	he	akau.
PRF	fall	(recent)	ABS	Uncle Bill	LOC	tree

'Uncle Bill has fallen from a tree!' (adapted from Olsson 2013:24)

(149) *Context: Your flatmate gets a phone call and when she hangs up she looks upset. She says:*

(**Kua**)	moua	tala	momoko	a	au	hagaao	ke	he	agukolo	haaku.
(**PRF**)	get	story	sad	ABS	1SG	concerning	about	LOC	uncle	1SG
(**Kua**)	gagao	(tei)	a	ia						
(**PRF**)	ill	(recent)	ABS	3SG						

'I received some sad news about my uncle. He's ill.' (adapted from Olsson 2013:24)

Finally, Olsson observes that iamitives do not like to appear in downward entailing environments (2013:33). Thus, in the following pair, iamitives are used in (150)a but not in (150)b, because (150)b is a downward entailing environment.[36]

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[35] *Kua* also fails to display a contrast seen with some iamitives between (i) and (ii).

(i) My brother is married.

(ii) My brother is married to a European woman.

In Jakarta Indonesian, for example, an iamitive is good in (i) (because it is expected that everyone will marry at some point), but bad in (ii) (Olsson 2013:26). In Niuean, *kua* is unacceptable in both sentences (just as the English present perfect is degraded).

[36] A downward entailing environment is one in which an entailment relation results when a set-denoting element is replaced with a proper subset of itself. An example is given in (i). The set of Griffyndor Quidditch players is a subset of the set of Griffyndors, and (ia) entails (ib), because the scope of negation is downward entailing.

(150) a. (How is the reading going so far?) Good, I READ three books (so far).
b. (How is the reading going so far?) Bad, I only READ three books (so far).
(Olsson 2013:34)

As shown in (151), *kua* is good in both members of the pair in (150), again behaving unlike an iamitive.[37]

(151) *Context: You have a plan to read lots of books this year. Your friends asks 'How is your reading going so far? You say:*

a. Mitaki, tolu e pepa **kua** totou e au.
good three ABS book **PRF** read ERG 1SG
'Good, I've read three books.'

b. Ai mitaki, tolu nī[38] e pepa **kua** totou e au.
NEG good three only ABS book **PRF** read ERG 1SG
'Not good, only three books have been read.'

In this section we have seen that although iamitives share an inchoative semantics with the Niuean perfect, the Niuean perfect is empirically distinguishable from iamitives.

7 Conclusion

In this paper we have provided novel data on the Niuean perfect marker *kua.* We have shown that this element has typical present perfect pragmatic effects such as lifetime effects, but gives rise to different readings with the various aspectual classes than the English perfect does. We have argued that all the different readings of *kua* are unified in that an initial BECOME event is placed inside the Perfect Time Span. The Niuean perfect is thus semantically an inchoativizer. Our analysis further accounts for the absence of universal perfect readings in Niuean, since U-perfects arise only with homogeneous eventualities, and BECOME-events are non-homogeneous. We further compared the Niuean perfect to its cognate aspects in Māori and Tongan, and to related constructions in other languages. We showed that although many of the Niuean facts mimic the Tongan ones, there are important differences in the details. The details

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(i) a. Snape does**n't** like [Griffyndors].
b. Snape does**n't** like [Griffyndor Quidditch players].

With respect to Olsson's test in (150), it actually doesn't follow from standard definitions that 'only' creates a downward-entailing environment. However, under certain additional assumptions, it does; see for example von Fintel (1999).

[37] Interestingly, *tei* 'recent' is good in (151)a (appearing after *tolu* 'three') but bad in (151)b, meaning that it patterns like an iamitive on this test.

[38] As Sperlich (1997:240) points out, *nī* is a postverbal emphatic particle that may have a range of meanings. We have glossed *nī* as 'only' in (151), because it clearly carries this meaning here, but we gloss it as EMPH in sentences like (11) where it has a more general emphatic function.

suggest that the Tongan perfect coerces inchoativity, while the Niuean perfect semantically encodes it.

In this final section we offer some thoughts on the consequences of our findings, and lay out some outstanding issues for future research. One obvious important question relates to a cross-linguistic typology of perfects. What kinds of variation do we expect in perfects across languages? Here is a speculation. Suppose that what unifies perfects is an assertion that an eventuality takes place within the Perfect Time Span. Beyond that, there are pieces of meaning (semantic or pragmatic) which languages can choose from, and combine in different ways. One piece of meaning which frequently appears with the perfect is a change-of-state. But it shows up in different places and in different ways. The different ways the change-of-state is implemented leads to much of the surface variation in readings and behaviour. For example, the change-of-state is in some languages coerced by a resultative perfect (Tongan), in some languages semantically encoded by all perfects (Niuean), and in some languages comes from somewhere other than the perfect itself (for example, from a separate telic operator, as proposed by Guekguezian for Saisiyat).

Looking beyond inchoative perfects, we find that inchoative semantics in general arises in a wide variety of ways, coming in at different levels of the grammar. Some of the options are summarized in Table 3. See also Koontz-Garboden (2007:126), who writes that 'Though all languages presumably have non-causative COS [change-of-state] meanings, my claim is that these meanings are derived in fundamentally different ways from one language to another.' More than one route to inchoativity can even exist within the same language, as indicated by the fact that in Table 3, some languages appear more than once.[39]

Table 3: Sources for inchoativity

SOURCE OF INCHOATIVITY	LANGUAGE(S)	REFERENCES
Lexical semantics of stative predicates	Sḵwx̱wú7mesh, SENĆOŦEN, …	Bar-el (2005), Kiyota (2008)
Inchoative affixation	St'át'imcets, Malagasy, ...	van Eijk (1997), Travis (2010), Davis (2012)
The perfective	Greek, SENĆOŦEN, …	Iatridou et al. (2001), Turner (2012)
The perfect	Niuean, St'át'imcets, ...	this paper, Davis (2012)
Iamitives	Indonesian, Vietnamese, …	Olsson (2013)
Independent lexical items	English, Niuean, ...	Seiter (1980)
An implicature via *already*	English, German, Javanese, ...	Löbner (1989), Vander Klok and Matthewson (2015)
Pragmatic coercion	Tongan, Niuean, ...	Koontz-Garboden (2007)

These findings have implications for a model of grammar whereby lexical aspectual operations such as inchoativization are strictly separated from viewpoint aspectual operations such as the perfect (Koontz-Garboden 2007:123 and references cited therein). We argue for a more flexible approach whereby different components of meaning (inchoativity, a Perfect Time Span restriction, current relevance effects) can be introduced at different levels and combined in

[39] Thanks to an anonymous reviewer for pointing this out.

different ways by languages to produce surface cross-linguistic variation.

There are several issues which require future research. The first concerns the 'about to' readings of activities with *kua;* our PTS-based analysis does not currently derive these. A second question for future research has to do with the relation between present perfects – which we have focused on here – and past and future perfects. As noted above, Niuean allows tense marking to be absent for both past and future events. The prima facie prediction is therefore that *kua* will allow both past and future perfect interpretations, without any additional marking. We have seen that this is a correct prediction for past perfects (12)-(15), (102)-(103), and for future perfects according to Seiter (1980) (16), but that our third author does not readily accept future perfect interpretations (17).

Another outstanding issue is the fact that in past narratives, *kua* may freely alternate with past marking, according to Seiter (1980:9), who follows McEwen (1970) (see (20) above). This is unexpected from the point of view of an English perfect, and also from the point of view of our analysis, which incorporates English-like current-relevance pragmatics. The puzzle is that on the one hand, *kua* is consistently judged by our third speaker to display current-relevance pragmatics like an English perfect, yet it is allowed in past narrative contexts. Three avenues for solutions spring to mind here. First, it is possible that the narrative uses of *kua* are actually past perfects (indeed, Bauer seems to suggest (1997:433) that narrative uses of Māori *kua* are sometimes past perfects). Second, it is possible that the narrative uses have restricted pragmatics in ways yet to be determined. Seiter's example in (20) is provided without its larger context, so it is difficult to determine what function *kua* is performing without further investigation. Referring again to Māori, Bauer claims that some of *kua*'s narrative uses convey a 'vividness' effect (1997:433); this may perhaps be likened to the English 'narrative present', the phenomenon whereby past events are narrated using present tense forms. A third possibility is that *kua* is allowed in narratives because it functions as a default TAM marker.[40] At this stage we are reluctant to adopt the default analysis however, because a default marker would be unlikely to induce the strong inchoative semantic effects that we have documented above. Further research is clearly required into these issues, as well as into most other facets of the semantics of the Niuean TAM system.

Finally, our findings in this paper point to an intriguing situation of micro-variation across languages which deserves further investigation. Across language families as diverse as Austronesian, Salish and Sino-Tibetan, elements appear which combine at least some properties of the perfect aspect, and an inchoativizing effect. The individual elements differ in subtle ways (consider the fine-grained differences between the Tongan and Niuean perfects discussed in section 6.1.2), and teasing their properties apart requires detailed semantic fieldwork. In addition, we have seen that the inchoativizing effect can be provided by any level of grammar from the lexical semantics of predicates themselves, through derivational morphology, viewpoint aspects, all the way up to pragmatic coercion. Detailed investigation of this issue in a range of languages has the potential to significantly impact our understanding of aspectual semantics and its place in the grammar of human languages.

Appendix: *tuai* and *tei*

[40] Thanks to an anonymous reviewer for this suggestion.

As mentioned in section 2, the postverbal element which often accompanies *kua* is written as *tuai* by Seiter (1980:8), but in the speech of our third author is pronounced [tei]. Our third author does have an element *tuai,* illustrated in (1), but this *tuai* means 'long ago'.

(1) Fā hī ika he vaha **tuai**
HAB catch.fish fish LOC time **long.ago**
'I used to fish a while back.'

The *tuai* in (1) appears in a different syntactic position from Seiter's 'perfect' *tuai.* According to Sperlich (1997:328f), there are two separate *tuai*s in Niuean*:* one which means 'long ago', 'old' or 'ancient' (see also Seiter 1980:82), and another which is related to the perfect or to 'already' or 'early'.[41]

Setting aside the 'ancient times' *tuai,* we seem to be left with a single postverbal element which is identified as *tuai* by Seiter (1980) and Massam (2009), but usually pronounced as [tei] by our third author. It may appear that this [tei] is simply a variant of *tuai*, and Sperlich (1997:329) does indeed list *tei* (as well as *tai*) as a variant pronunciation of *tuai*. Seiter's grammar also contains a few instances of *tei* rather than *tuai* with a perfect-like meaning. An example is given in (2); see also Seiter (1980:52,180).

(2) Kua kamata **tei** e tau matahui ke oeli e lautolu.
PRF begin **PRF** ABS PL knee COMP oil ERG 3PL
'They've begun to get a little drunk.' (Seiter 1980:191)

Further, Diane Massam observes (p.c.) that in the speech of her consultants, the post-verbal perfectlike element which she spells *tuai* is in fact pronounced [tei]. Some of the apparent pronunciation differences therefore result from different spelling conventions. We have chosen to spell the element as *tei,* to overtly reflect the pronunciation of our third author.[42]

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[41] Whether they were originally the same element, and if so, when these two meanings diverged, is not 100% clear. Pollex Online reconstructs both meanings of Niuean *tuai* to Proto-Oceanic ***tuai*** 'of ancient times, old'.

[42] The unusual pronunciation of *tei* as [tei], rather than [sei] as would be expected given general phonological rules of the language, is another question for future research. The atypical pronunciation could suggest a series of historical sound changes from *tuai* through *tai* to *tei.* Alternatively, modern-day *tei* might derive from Proto-Tahitic ***tei,*** a 'particle indicating present position or action', apparently related to Proto-Polynesian ***te*** 'non-past tense' (Pollex Online, http://pollex.org.nz/entry/tei/). On the other hand, the Proto-Tahitic ***tei*** may be an ancestor of Niuean *tei(tei)* [sei(sei)] meaning 'almost', given that one of its modern reflexes according to Pollex Online is East Uvea *tei,* with the French translation 'presque'. The phonological, syntactic, and semantic differences between pre-verbal *tei(tei)* 'almost' and postverbal *tei* are illustrated in (i) (see Seiter 1980:13, Sperlich 1997:309 on pre-verbal *tei(tei)*).

(i) Kua *tei(tei)* [sei(sei)] oti tei [tei] e vahega
PRF *almost* finish **recent** ABS class
'The class is nearly finished.'

It is important to note that not all instances of postverbal *tuai* can be replaced with *tei* in the speech of our third author. While either *tuai* or *tei* can co-occur with *kua* (3), the third author can only use *tuai* with future (4) and past tense markers (5)-(6).

(3) Kua fano **tuai/tei** a ia.
PRF go ABS 3SG
'He has (already) gone.'

(4) To fano **tuai/*tei** au.
FUT go 1SG
'I will have gone (already, early).'

(5) Na palana **tuai/*tei** nī au ke lagomatai a koe.
PST plan EMPH 1SG COMP help ABS 2SG
'I'd already planned to help you.'

(6) Ne ala **tuai/*tei** a ia.[43]
PST wake.up ABS 3SG
'He'd already woken up./He'd woken up early.'

This suggests that there may actually be three distinct *tuais* in Niuean: the 'ancient times' *tuai* as in (1), the *tuai* that is compatible with future and past tense markers and is best translated as 'early' or 'already' as in (4)-(6), and a third *tuai* that is associated with the perfect and which we are tentatively glossing as 'recent' based on the intuitions and judgments of our third author, as in (3). For the third author, only this 'recent' *tuai* alternates with *tei* [tei].

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[43] Sperlich (1997:328f) gives the example with *tuai*. The third author notes that *tuai* is fine for her in this context, but postverbal *tei* is ungrammatical.

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