On Non-Culminating Accomplishments[1]

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1.   Introduction

In English, non-progressive sentences containing accomplishment VPs give rise to culmination entailments. For example, (1) entails that the fixing was completed.

(1)   I fixed the fence (# but I didn't finish fixing it).

In this paper we examine the corresponding class of VPs in two Salish languages: St'át'imcets and Skwxwú7mesh.[2] We first provide evidence that the closest equivalents to accomplishment VPs in St'át'imcets and Skwxwú7mesh - 'control transitives' - do not give rise to culmination entailments. Instead, they have culmination implicatures, which can be cancelled without contradiction.

We then provide an analysis of the Salish data. In both languages, control transitive verbs are derived by suffixation of a transitivizer to a root verb with a single internal argument (Davis 1997, Davis and Demirdache 2000). Unlike control transitives, these underlying root verbs have a culmination entailment which cannot be cancelled. Control transitivizers therefore appear to remove the requirement that culmination happens in the actual world. Our analysis of control transitivizers treats them as introducing inertia worlds in the sense of Dowty's (1977, 1979) analysis of the English progressive.

We close the paper with discussion of the consequences of our analysis for cross-

[2] St'át'imcets (a.k.a. Lillooet) is a Northern Interior Salish language spoken in the southwest interior of British Columbia, Canada. Skwxwú7mesh (a.k.a. Squamish) is a Central (Coast) Salish language traditionally spoken in the Squamish Valley, Howe Sound and Vancouver area of BC. Both languages are extremely endangered.

linguistic variation, and for the relationship between culmination properties and temporal duration. We conclude that the Salish data argue against a unified analysis of both 'accomplishments' and 'achievements' as primitive aspectual classes in natural language.

In the remainder of this introduction we outline some relevant background assumptions about English accomplishments and about (im)perfectivity in Salish.

1.1. English accomplishments

In English, accomplishment VPs are telic ('have a natural endpoint') as opposed to activity VPs, which are atelic. A standard test for telicity shows that accomplishments are, but activities are not, compatible with the phrase *in an hour:*

(2)   a.   I fixed the fence.   ACCOMPLISHMENT; TELIC
      b.   I fixed the fence in an hour.

(3)   a.   I pushed the cart.   ACTIVITY; ATELIC
      b.   * I pushed the cart in an hour.

Culmination is entailed when an accomplishment is non-progressive. We can tell that this culmination is an entailment (rather than an implicature) because of the imperfective paradox. The progressive/imperfective proposition in (4a) does not entail the non-progressive/perfective proposition in (4b); yet if (4b) did not itself entail culmination, then (4a) could not fail to entail (4b). A common solution to the paradox is to claim that (4a) does not entail culmination in the actual world, whereas (4b) does.

(4)   a.   I was fixing the fence.
      b.   I fixed the fence.

1.2. (Im)perfectivity in Salish

Turning to Salish, we make the following background assumptions: (i) predicates are in the perfective aspect if they are not overtly marked as imperfective (Mattina 1993, Mattina 1996, Bar-el in prep.); (ii) Salish perfectives are of the standard type, placing the event time inside the reference time (Matthewson 2004, Bar-el in prep.), as opposed to semi-perfectives (Koenig and Muansuwan 2000) or neutral perfectives (Singh 1998).

Finally, a terminological note: since the class of accomplishment VPs in English systematically corresponds to a certain class of VPs in St'át'imcets and Skwxwú7mesh, we will also refer to the latter as 'accomplishments'. However, since our claim is precisely that the semantics of this class varies cross-linguistically, the very notion of 'accomplishment' will ultimately need to be deconstructed.

2. Accomplishments in St'át'imcets and Skwxwú7mesh

Accomplishments are distinguishable from activities in both St'át'imcets and Skwxwú7mesh by differences in out-of-the-blue judgments about tense and culmination. In the absence of overt tense or aspect marking, the default interpretation of

accomplishments is in the <u>past</u>, and involves <u>culmination</u>:[3]

(5)   a.   ts'áqw-an'-lhkan   ta   n-kíks-a
                 eat-TR-1SG.SU   DET   1SG.POSS-cake-DET
                 'I ate my cake.'   (St'át'imcets)
                 Speaker's comments: "Sounds like you ate all of it."

         b.   q'ets'-en-lhkán   ti   ts'áz'cen-a
                 hook-TR-1SG.SU   DET   rug-DET
                 'I hooked a rug.'   (St'át'imcets)
                 Speaker's comments: "That sounds like a finished product."

(6)   a.   na xel'-t-as   ta   sxwexwiy'am'   lha   Mary
                 RL write-TR-3ERG   DET   story   DET   Mary
                 'Mary wrote a story.'   (Skwxwú7mesh)
                 Speaker's comments: "She wrote it…she finished."

         b.   chen   p'ayak-an   ta   tetxwem
                 1SG.SU   fix-TR   DET   car
                 'I fixed the car.'   (Skwxwú7mesh)
                 Speaker's comments: "You already fixed it."

Activities, on the other hand, can easily be interpreted in the present:

(7)   a.   ít'-em-lhkan
                 sing-MID-1SG.SU
                 'I sang / I am singing.'   (St'át'imcets)

         b.   k'wzús-em   ti   syáqts7-a
                 work-MID   DET   woman-DET
                 'The woman is working.'   (St'át'imcets)

(8)   a.   chen   7imesh
                 1SG.SU   walk
                 'I walked / 'I'm walking.'   (Skwxwú7mesh)

         b.   chen   xaam
                 1SG.SU   cry
                  'I cried / I'm crying.'   (Skwxwú7mesh)

     However, the culmination of accomplishments in St'át'imcets and Skwxwú7mesh is only an implicature. Culmination can be explicitly denied without contradiction:[4]

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[3] Data are presented in the official orthographies of the languages. Where relevant, the fact that the English translation was volunteered by the consultant is marked with *VG* ('volunteered gloss').
    [4] See also Matthewson to appear, Davis (in prep.), and Bar-el (to appear a,b, in prep.).

(9) máys-en-lhkan ti   q'láxan-a,   t'u7 cw7ay t'u7 kw-s   tsúkw-s-an
     fix-TR-1SG.SU DET fence-DET   but NEG   just DET-NOM finish-CAU-1SG.ERG
     'I fixed a fence, but I didn't finish.'   (St'át'imcets)

(10) ts'áqw-an'-lhkan   ti   n-kíks-a   lhkúnsa   ku   sq'it,
     eat-TR-1SG.SU   DET   1SG.POSS-cake-DET   now   DET   day
             t'u7 qelh-cál-lhkan   ku   k'wík'wena7 t'u   natcw
             but   save-ACT-1SG.SU   DET   few   until tomorrow
     'I ate my cake today, but I saved a little for tomorrow.'   (St'át'imcets)

(11) k'ul'-ún'-lhkan   ti   ts'lá7-a,   t'u7 aoy t'u7 kw tsukw-s
     make-TR-1SG.SU DET basket-DET   but NEG just DET finish-3POSS
     'I made the basket, but it didn't get finished.'   (St'át'imcets)

(12) na   p'ayak-ant-as   ta John   ta   snexwilh-s
     RL   heal-TR-3ERG   DET John   DET canoe-3POSS
             welh haw   k-as   7i   huy-nexw-as
             CONJ NEG   IRR-3CNJ   PART finish-LC-3ERG
     'He fixed his canoe but he didn't finish (fixing) it.' *VG*   (Skwxwú7mesh)

(13) chen   p'ats'-an   ta   hem'-ten   kwi   chel'aklh
     1SG.SU   sew-TR   DET   cover-INSTR DET   yesterday
             welh haw   k-an   7i   huy-nexw
             CONJ NEG   IRR-1SG.CNJ   PART finish-LC
     'I sewed a/the blanket yesterday but did not finish.' *VG*   (Skwxwú7mesh)

(14) kw John   na kw'el-nt-as   ta   skawts
     DET John   RL cook-TR-3ERG   DET potato
             welh haw   k-as   7i   huy-nexw-as
             CONJ NEG   IRR-3CNJ   PART finish-LC-3ERG
     'John cooked a potato but never finished.'   (Skwxwú7mesh)

In Skwxwú7mesh, the event can be continued without inducing a contradiction:[5]

(15) chen   yetl'k-an ta lam' 7i   na7-xw   chen wa   yetl'k-an
     1SG.SU paint-TR DET house PART RL-still   1SG.SU IMPF paint-TR
     'I painted the house and I'm still painting it.'   *VG* (Skwxwú7mesh)

(16) chen kw'el-t   ta   smits ti   natlh
     1SG.SU cook-TR   DET   meat DET   morning
             7iw'ayti   wa7-xw   wa   kw'el ta   smits
             maybe   IMPF-still   IMPF cook DET   meat
     'I cooked the meat this morning and it's still cooking.' *VG*   (Skwxwú7mesh)

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[5] We do not give St'át'imcets data here, due to language-internal complications with the test.

In both languages, culmination can be questioned without inducing an infelicitous sequence:

(17)　A:　q'ets'-en-ás　　　ta　　tsákwcetn-a　kw-s　　　　Mary
　　　　　weave-TR-3ERG　　DET　rug-DET　　　DET-NOM　　Mary
　　　　　'Mary was weaving a rug.'

　　　　B:　wa7　ha　　t'u7　q'ets'-en-ás
　　　　　IMPF　YNQ　still　weave-TR-3ERG
　　　　　'Is she still doing it?'　　　　　　　　　　　　　　　　　(St'át'imcets)

(18)　A:　na ch'a7-st-as　　　　kwi　kw'axwa7　lha　Mary
　　　　　RL make-CAU-3ERG　DET　box　　　　　DET　Mary
　　　　　'Mary made a box.'

　　　　B:　na 7u　　　　huy-nexw-as
　　　　　RL YNQ　　　finish-LC-3ERG
　　　　　'Did she finish it?'　　　　　　　　　　　　　　　　　(Skwxwú7mesh)

(19)　A:　na 7ilhen-t-as　　　　ta　　skawts　　kwa　John
　　　　　RL eat-TR-3ERG　　　DET　potato　　DET　John
　　　　　'John ate a potato.'

　　　　B:　na 7u　　　　huy-nexw-as　　　　ta　　skawts
　　　　　RL YNQ　　　finish-LC-3ERG　　DET　potato
　　　　　'Did he finish (the potato?)'　　　　　　　　　　(Skwxwú7mesh)

Finally, note that the past tense effect is also cancelable, as shown in (20-23). (Recall that all these sentences are in the perfective aspect. The progressive translations here are an artifact of the English restriction on present-tense eventive predicates.)

(20)　q'wel-en-lhkán　　　ta　ts'í7-a,　t'u7 cw7aoy t'u7　kw-s　　　q'wel-s
　　　cook-TR-1SG.SU　　DET deer-DET but　NEG　　still　DET-NOM　cook-3POSS
　　　'I am cooking deer meat, but it isn't done yet.'　*VG*　　(St'át'imcets)

(21)　máys-en-as　ta　　káoh-a　　　　kw-s　　　　Bill
　　　fix-TR-3ERG　DET　car-DET　　　DET-NOM　　Bill
　　　'Bill is fixing the car.'　　　　　　　　　　　*VG*　　(St'át'imcets)

(22)　na mikw'-int-as　　ta　　lhxenptn　　lha　Mary
　　　RL wash-TR-3ERG　DET　floor　　　　DET　Mary
　　　　　7i　　na7-xw　　　wa　　mikw'-int-as
　　　　　PART　RL-still　　　IMPF　wash-TR-3ERG
　　　'Mary is washing the floor and she's still washing it.' *VG*　　(Skwxwú7mesh)

(23)　na lhen-t-as　　　　ta　　　hem'-ten　　lha　　Linda
　　　RL weave-TR-3ERG　　DET　　cover-INSTR　DET　　Linda
　　　　　7iw'ayti　　　na7-xw　　　　wa　　lhen-t-as
　　　　　maybe　　　　RL-still　　　IMPF　weave-TR-3ERG
　　　'Linda's making a blanket, maybe she's still making it.'　　　(Skwxwú7mesh)

It is important to emphasize that these data differ qualitatively from data in English. For comparison, two separate surveys of naïve English speakers were undertaken. Both resulted in judgments of marginality or ungrammaticality for an overwhelming majority of test sentences involving perfective (non-progressive) accomplishments with denial of culmination. In other words, the culmination of an English perfective accomplishment is <u>not</u> cancelable – culmination is an entailment, not an implicature. The comments in (24-25) are from different speakers:

(24)　a.　#　Mary wove a blanket and is still weaving it.
　　　　　　Speaker's comments: "Saying that she wove a blanket means she completed it so how could she still be weaving it?"

　　　b.　#　Mary read a book but didn't finish it.
　　　　　　Speaker's comments: "Should say 'Mary started reading a book…but didn't finish it'."

　　　c.　#　Mary ate an apple and she is still eating it.
　　　　　　Speaker's comments: "If she ate it, she can't still be eating it – ate implies she's done!"

(25)　A:　　Mary wove a blanket.
　　　B1:　　Did she finish it?
　　　B2:　　Is she still weaving it?
　　　Speaker's comments: "Sounds strange…because when you say wove a blanket it means she finished, so why would you have to ask whether she finished it?"

3.　Analysis
3.1　Accomplishments are derived from telic roots[6]

The accomplishment VPs we are investigating in St'át'imcets and Skwxwú7mesh are formed by the addition of a control transitivizer to bare roots. These roots are unaccusative (have a single internal argument; Davis 1997), and have culmination entailments (Davis in prep). (26-31) show that bare roots are systematically interpreted in the past:

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[6] Bare roots have not yet been widely elicited in Skwxwú7mesh, but the available Skwxwú7mesh data systematically support the claims made here.

(26)   q'ets'   ti   swíta-s-a
           get.knitted   DET   sweater-3POSS-DET
           'Her sweater got knitted.'   *VG*   (St'át'imcets)
           Can it mean it's being knitted right now? "No. It just means her sweater got knitted."

(27)   ts'aqw   ti   ts'úqwaz'-a
           get.eaten   DET   fish-DET
           'The fish got eaten.'   *VG*   (St'át'imcets)
           Can it mean the fish is getting eaten? "No. It just means it got eaten."

(28)   q'wel   ti   ts'úqwaz'-a
           get.cooked   DET   fish-DET
           'The fish is cooked.'   *VG*   (St'át'imcets)
           Rejected gloss: 'The fish is being cooked.'

(29)   na ḵw'el   ta   smits
           RL get.cooked DET   meat
           'The meat is cooked / got cooked.'   (Sḵwx̱wú7mesh)

(30)   na yetl'ḵ   ta   lam'
           RL get.painted DET   house
           'The house got painted.'   *VG*   (Sḵwx̱wú7mesh)

(31)   na payaḵ   ta   snexwilh
           RL get.fixed   DET   canoe
           'The canoe got fixed.'   (Sḵwx̱wú7mesh)

Furthermore, canceling the culmination of bare roots results in a contradiction:

(32) * mays   ti   q'láxan-a, t'u7 aoy   t'u7 kw-s   ka-máys-ts-a
           get.fixed   DET fence-DET but   NEG just DET-NOM   OOC-fix-3POSS-OOC
           'The fence got fixed, but it couldn't get fixed.'   (St'át'imcets)
           Speaker's comments: "Contradiction."

(33) * mets   ta   púkw-a,   t'u7   aoy t'u7 kw-s   tsukw-s
           get.written DET book-DET but   NEG just DET-NOM   finish-3POSS
           'The book got written, but it isn't finished.'   (St'át'imcets)
           Speaker's comments: "Contradiction."

(34) * na ḵw'el   ta   smits 7i   na7-xw   wa   kw'el-t-as
           RL get.cooked DET meat PART RL-still   IMPF cook-TR-3ERG
           Speaker's comments: "You're saying its cooked but they're still cooking it!...Why would you keep on cooking it? It's cooked!...Unless she thought it wasn't quite cooked, then she might put it back in the oven."   (Sḵwx̱wú7mesh)

(35) * na yetl'<u>k</u> ta lam' 7i na7-xw   wa yetl'<u>k</u>-ant-as
   RL get.painted DET house PART RL-still   IMPF paint-TR-3ERG
   'The house got painted and it's still being painted.'   (S<u>k</u>w<u>x</u>wú7mesh)
   Speaker's comments: [laughs] "No good."

   The denotation of an unaccusative root verb is provided in (36), and the denotation of a sentence containing this root is given in (38). (For the analysis of the St'át'imcets tense system assumed here, see Matthewson 2003, 2004.)

(36) $[[\textbf{mays}]]^{W} = \lambda e\ \lambda x\ [x\ \text{gets fixed in w (e)}]$

(37) mays   ti q'láxan-a
    get.fixed DET fence-DET
    'The fence got fixed.'   (St'át'imcets)

(38) $[[\textbf{TENSE}_{i}\ \textbf{PERF mays ti q'láxana}]]^{w,g} = \exists e$ [the fence gets fixed in w (e) & τ(e) $\subseteq$ g(i)] (where g(i) < Utterance Time or g(i) overlaps Utterance Time)

    'There is an event e of the fence getting fixed, and the running time of e is included within the contextually salient (past or present) reference time.'

3.2. Control Transitivizers

The control transitivizers in both St'át'imcets and S<u>k</u>w<u>x</u>wú7mesh seem to perform two functions. They introduce an agent in control over the event (which is missing in the bare root), and they remove the requirement of the bare root that the event culminate in the actual world. A denotation which captures these two effects is given in (39).[7,8]

(39) $[[\text{CONTROL.TRANS}]]w = \lambda f \in D_{<l,st>}$ [λe [e is controlled by its agent in w & $\forall$w' [w' is an inertia world w.r.t. w at the beginning of e → [$\exists$e' [f (e')(w') & e causes e' in w']]]] (l = events; Intensional Functional Application is used)

   According to (39), CONTROL.TRANS takes a telic verbal root, and ensures that (i) the event is controlled by its agent and (ii) in all inertia worlds, the event leads to the culmination expressed by the root. When applied to the St'át'imcets root *mays* 'get fixed', CONTROL.TRANS says that an agent performs an action which in the normal course of events would lead to the fence getting fixed. This is illustrated in (40-41).

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[7] We confine ourselves here to the prototypical control transitivizers –*Vn(')* (St'át'imcets) and *Vn/-Vt/-Vnt* (S<u>k</u>w<u>x</u>wú7mesh), glossed TR here. Both languages have a number of other transitivizers which could be classified as 'control', as well as 'limited control' (LC: S<u>k</u>w<u>x</u>wú7mesh only) and 'non-control/causative' (CAU) transitivizers. We leave analysis of these for future research. See Thompson (1979), Davis and Demirdache (2000), among others, for discussion of control in Salish.
[8] For the connection between control and modalization, cf. English *Bob is silly* (non-control) vs. *Bob is being silly* (control). The cross-linguistic parallel here is surely non-accidental, and invites further investigation.

(40)   máys-en-lhkan   ti   q'láxan-a
       fix-TR-1SG.SUBJ   DET   fence-DET
       'I fixed the fence.'

(41)   [[TENSE_i PERF máysenlhkan ti q'láxana]]^{w,g} = ∃e [I am the agent of e & e is controlled by me in w & [∀w' [w' is an inertia world w.r.t. w at the beginning of e → [∃e' [the fence gets fixed in w' (e') & e causes e' in w']]]] & τ(e) ⊆ g(i)]

       'I was the agent of an event e, whose running time is including in the contextually salient (past or present) reference time, and which in all inertia worlds causes the fence to get fixed.'

This analysis draws on the modalized approach often used for the progressive (e.g., Dowty 1977, 1979, among many others.). However, the analysis proposed here allows the inertia worlds to branch off at the beginning of the event, rather than at the end of the reference time. Thus, St'át'imcets and Skwxwú7mesh perfective accomplishments have different truth conditions from English progressives. In the English *I was fixing a fence,* the reference time is contained within the event time, and therefore (within the reference time) the event cannot culminate in the actual world. In St'át'imcets and Skwxwú7mesh, the event time is inside the reference time (as with any perfective); this event may or may not culminate in the actual world.

4.   The Source of the Implicature

Recall that St'át'imcets and Skwxwú7mesh accomplishment VPs give rise to an implicature of culmination when used out of the blue.

(42)   ts'áqw-an'-lhkan   ta   n-kíks-a
       eat-TR-1SG.SUBJ   DET   my-cake-DET
       'I ate my cake.'   (St'át'imcets)
       Speaker's comments: "Sounds like you ate all of it."

(43)   na xel'-t-as   ta   sxwexwiy'am'   lha   Mary
       RL write-TR-3 DET   story   DET   Mary
       'Mary wrote a story.'
       Speaker's comments: "She wrote it...she finished."   (Skwxwú7mesh)

       We argue that the implicature of culmination arises because in all inertia worlds, the event culminates. In the absence of other information, the hearer assumes that the 'normal' course of events (culmination) takes place.
       The fact that the English progressive, which also involves inertia worlds, does not implicate culmination is explained by the presence in English (unlike in St'át'imcets or Skwxwú7mesh) of a contrasting perfective form which underlines culmination. Thus, (44a) is a better way to express culmination than (44b), so (44b) lacks a culmination implicature:[9]

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[9] There are actually perfective transitive accomplishments which entail culmination in St'át'imcets and Skwxwú7mesh; these take a non-control transitivizer. Further research is required here, but it still holds that for any agent in control of an event, there is no contrasting culminating form.

(44) a. John built a house. (ENTAILS CULMINATION)
　　 b. John was building a house. (DOES NOT IMPLICATE CULMINATION)[10]

　　What about the tense effect? That is, why are St'át'imcets and Skwxwú7mesh accomplishments usually translated in the past? We adopt a similar idea here: in St'át'imcets and Skwxwú7mesh, there is a contrasting form (using the imperfective morpheme) which is a better way to express the present imperfective interpretation (since it explicitly makes sure the event is not completed within the reference time). Therefore, the preferred interpretation of a perfective accomplishment sentence is in the past. The perfective / imperfective contrast with respect to tense is illustrated in (45-46).

(45) a. máys-en-lhkan　　　　ta　　káoh-a
　　　　　fix-TR-1SG.SU　　　　DET　car-DET
　　　　　'I fixed the car.'　　　　　　　　　　　　　　　　　　(St'át'imcets)

　　 b. wá7-lhkan　　máys-en　　　　ta　　káoh-a
　　　　　IMPF-1SG.SU　fix-TR　　　　DET　car-DET
　　　　　'I'm fixing the car.'　　　　　　　　　　　　　　　　(St'át'imcets)

(46) a. chen　　　　　lhen-t　　　ta　　hem'-ten
　　　　　1SG.SU　　　　weave-TR　　DET　cover-INSTR
　　　　　'I made a blanket.'　　　　　　　　　　　　　　　(Skwxwú7mesh)

　　 b. chen　　　　wa　　lhen-t　　　ta　　hem'-ten
　　　　　1SG.SU　　　IMPF　weave-TR　　DET　cover-INSTR
　　　　　'I'm making the blanket.'　　　　　　　　　　　　(Skwxwú7mesh)

　　Note, however, that as predicted by our analysis, present progressive translations of perfective accomplishments are possible, as shown in (47-48).

(47) máys-en-as　　ta　　káoh-a　　　　kw-s　　　　　Bill
　　　fix-TR-3ERG　DET　car-DET　　　DET-NOM　　　Bill
　　　'Bill is fixing the car.'　　　VG　　　　　　　　　　　(St'át'imcets)

(48) A: na 7encha　　lha　　Carrie
　　　　　RL where　　DET　Carrie
　　　　　'Where is Carrie?'

　　 B: na7　ta　　lam'-s
　　　　　LOC　DET　house-3POSS
　　　　　'At her house.'

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[10] Hotze Rullmann (p.c.) observes that we may in fact predict that the English progressive should implicate non-culmination, rather than merely failing to implicate culmination. Further work is required here (including establishing the facts about the implicatures of the English progressive).

A:	na wa	chanem	lha	Carrie
	RL IMPF	do.what	DET	Carrie

'What is she doing?'

B:	na p'ats'-ant-as	ta	yekway'-s
	RL sew-TR-3ERG	DET	dress-3POSS

'She's sewing her own dress.'   *VG*   (Skwxwú7mesh)

5.   Implications for cross-linguistic variation

We have proposed in this paper that St'át'imcets and Skwxwú7mesh have a culmination requirement in the lexical entries of unaccusative roots.[11] Control transitives are all derived from such telic unaccusative roots. The control transitivizer introduces modality: culmination is not required in the actual world for perfective control transitives. While it is not yet known whether this exact analysis is applicable across the Salish family, there is preliminary supporting evidence from at least Sliammon (Mainland Comox; J. Davis 1978, Watanabe 2003) and Senchothen (Northern Straits; Kiyota 2004).[12]

         In this section we briefly address the consequences of our analysis for the claim that in languages such as English, German and Finnish, telicity is introduced not in the verbal root, but by a higher functional head (see e.g., Tenny 1994, Borer 1994, Kratzer 2004). This seems to be the reverse of the Salish situation, where underlyingly telic roots are made atelic by a higher functional head. However, the two types of system may not involve radical cross-linguistic variation after all.[13] Suppose we assume a universal hierarchy of functional heads as in (49):

(49)   [(Im)perfective [Root/inertia modality [Voice [Telic [V]]]]]

Suppose we further assume, following Pylkkanan (2003), that adjacent functional heads may be 'bundled' into a single morpheme. We can then propose that in languages like German, the Voice and Telic heads are bundled into a single morpheme (which can also be called Accusative Case; cf. Kratzer 2004). This accounts for the observation that the adding of an accusative object in such languages also induces telicity. In our two Salish languages, on the other hand, bare roots already incorporate Telic, and the control transitivizers represent a bundling of Root/inertia modality and Voice. This accounts for the fact that adding the agent in such languages removes telicity. Finally, the English progressive bundles Imperfective together with Root/inertia modality.

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        [11] It might be possible to strengthen this to the claim that all (non-stative) roots culminate, in which case the requirement could be stated over the whole lexicon, rather than root by root.
        [12] See also Travis (2000) on Malagasy and Tagalog. Travis argues for an Inner Aspect head which can introduce 'incompleteness'. She shows that Malagasy possesses affixes introducing both telicity and atelicity, and moreover that there is a correlation between volition and telicity. Thus, the morpheme *maha-* enforces telicity and also non-volitionality. This directly parallels the Salish situation, where the control transitivizers allow non-culmination, but non-control transitivizers enforce culmination (see fn. 9 above).
        [13] Thanks to Angelika Kratzer (p.c.) for discussion of these issues.

6.   'Culminativity' versus 'Durativity': Defining Aspectual Classes[14]

In this final section we point out that culmination properties must be treated as partially independent of the relative duration of events. This will lead us to claim that neither 'accomplishments' nor 'achievements' can be treated as primitive aspectual classes.

Consider, for example, the contrast between unaccusative roots and their control transitive alternates in St'át'imcets. As we have seen, unaccusatives have a culmination entailment, but control transitives have a culmination implicature. However, other aspectual tests treat the two classes <u>identically</u> (essentially, as consisting of an initial process followed by a final state), in contrast to activities and (resulting) states.

As we have seen, in out-of-the-blue contexts, bare roots and control transitives have a past tense interpretation (50a-b); in contrast, activities have a present or past tense interpretation (50c), and (resulting) states are interpreted in the present (50d).

(50) a.   mays   ta   káoh-a
            get.fixed   DET   car-DET
            'The car got fixed.'   *UNACC. ROOT*   (St'át'imcets)

       b.   máys-en-lhkan   ta   káoh-a
             get.fixed-TR-1SG.SU   DET   car-DET
             'I fixed the car.'   *CONTROL TRANS.*   (St'át'imcets)

       c.   máys-cal -lhkan   ki   káoh-a
             get.fixed-ACT-1SG.SU PL.DET   car-DET
             'I am fixing/fixed some cars.'   *ACTIVITY*   (St'át'imcets)

       d.   (e)s-máys   ta   káoh-a
             STAT-get.fixed   DET   car-DET
             'The car is fixed.'   *STATE*   (St'át'imcets)

When modified by the imperfective auxiliary *wa7,* unaccusatives, control transitives and activities all yield a <u>process</u> reading, in contrast to resulting states, which yield a (somewhat marginal) <u>temporary state</u> reading:[15]

(51) a.   wa7   mays   ta   káoh-a
            IMPF   get.fixed   DET   car-DET
            'The car is/was being fixed.'   *UNACC. ROOT*   (St'át'imcets)

       b.   wá7-lhkan   máys-en   ta   káoh-a
             IMPF-1SG.SU   get.fixed -TR   DET   car-DET
             'I am/was fixing the car.'   *CONTROL TRANS.*   (St'át'imcets)

       c.   wá7-lhkan   máys-cal   ki   káoh-a
             IMPF-1SG.SU   get.fixed -ACT PL.DET   car-DET
             'I am/was fixing some cars.'   *ACTIVITY*   (St'át'imcets)

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[14] This discussion is based on St'át'imcets; extension to Skwxwú7mesh requires further research.
[15] The imperfective also allows a habitual reading which is not relevant to the discussion here.

    d.   wa7 (e)s-máys   ta   káoh-a
              IMPF STAT- get.fixed DET   car-DET
              'The car is fixed (temporarily).'   *STATE*   (St'át'imcets)

        Finally, when modified by a combination of the perfect aspect marker *plan* (usually translated as 'already'), plus the imperfective *wa7,* unaccusatives and control transitives are both ambiguous between a <u>process</u> and <u>resulting state</u> reading, whereas activities yield <u>only a process</u> reading, and states yield <u>only a resulting state</u> reading:

(52)   a.   plan wa7 mays   ta   káoh-a
              already IMPF get.fixed   DET   car-DET
              (i) 'The car is/was already being fixed.'
              (ii) 'The car has/had already been fixed.' *UNACC. ROOT*   (St'át'imcets)

        b.   plán-lhkan   wa7   máys-en   ta   káoh-a
              already-1SG.SU   IMPF   get.fixed -TR DET   car-DET
              (i) 'I am/was already fixing the car.'
              (ii) 'I have/had already fixed the car.'   *CONTROL TRANS.*   (St'át'imcets)

        c.   plán-lhkan   wa7   máys-cal   ki   káoh-a
              already-1SG.SU   IMPF   get.fixed -ACT PL.DET   car-DET
              'I am/was already fixing some cars.' *ACTIVITY*   (St'át'imcets)

        d.   plan   wa7 (e)s-máys   ta   káoh-a
               already IMPF   STAT- get.fixed   DET   car-DET
               'The car is/was already fixed.'   *STATE*   (St'át'imcets)

        The results of these tests are summarized in (53). The unaccusative roots and the control transitives behave exactly alike, in spite of differing with respect to culmination:

(53)	*unaccusatives*	*control transitives*	*activities*	*resulting states*
out-of-blue	past	past	past/present	present
wa7	process	process	process	temporary state
plan wa7	process/result state	process/result state	process	result state

        These tests pick out three aspectual classes: states, activities, and 'accomplishments', the last class including both unaccusative roots and control transitives. In other words, (non-instantaneous) unaccusative roots and control transitives have identical aspectual properties as far as (53) is concerned, in spite of the culmination difference we have demonstrated.
        What about 'true' (i.e., instantaneous or near-instantaneous) achievements? Here, the culmination difference is sometimes neutralized (54-55), but sometimes not (56):

(54) # pun　　　　ta　　sk'úk'wmi7t-a,　　t'u7　wa7　t'u7　pel'p[16]
　　　get.found　DET　child-DET　　　　　but　　IMPF　still　lost
　　　'The child was found, but it was still lost.'　　　　　　　(St'át'imcets)
　　　Speaker's comment: "Contradiction."

(55) # pún-lhkan　　　　　ta　　sk'úk'wmi7t-a,　　t'u7　wa7　t'u7　pel'p
　　　find(TR)-1SG.SU　DET　child-DET　　　　　but　　IMPF　still　lost
　　　'I found the child, but it was still lost.'　　　　　　　(St'át'imcets)
　　　Speaker's comment: "Contradiction."

(56)　lhek'w-en-ts-ás　　　　　ta　　táokth-a,　　t'u7　ka-qwéts-s-a
　　　poke-TR-1SG.OBJ-3ERG　DET　doctor-DET　but　　OOC-move-CAUS-3POSS-OOC
　　　　　　ta　　n7aláxan-a,　　nilh　s-cik'-s　　　　　　ta　　pátkwh-a
　　　　　　DET　upper.arm-DET　FOC　NOM-miss-3POSS　　DET　needle-DET
　　　'The doctor injected me, but my arm moved so the needle missed.'(St'át'imcets)

　　　The reason for this is presumably that even with the modalization induced by the control transitivizer, the temporal interval between inception and culmination is sometimes too small to allow worlds to 'branch', leading to a neutralization of the culmination properties of unaccusatives and control transitives in examples like (54-55). (The same is true of transitive activities such as *cikin'* 'to push something', which also do not allow cancellation.) The result, then, is that the traditional class of 'achievements' as denoting events which are both instantaneous and inherently telic cannot be upheld. St'át'imcets reveals that telicity is separable from instantaneity. In fact, it is possible that the latter is a facet of real-world knowledge (the 'encyclopedia') rather than a property which defines membership in a particular aspectual class.

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[16] The predicate *pun* 'be found (intr.), find (tr.)' is a unique case of a verb whose unaccusative root is formally identical to its control transitive alternant. This is because the *–Vn* transitivizer has fused with the root in the transitive variant.

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